GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

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Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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1: /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT: *
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148
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Gapop 10.0 , Gapext 0.5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         747574 seqs, 111073796 residues
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13.589 Million cell updates/sec
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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) <sub>27</sub>	Result	Score	Query	Length DB		3	700001171
Z S	111111						
ئے	Ľ	148	100.0		21	AAB37055	Bcl2 polypeptide B
	ω	143	96.6	27	21	AAB37056	Bcl2 polypeptide B
	w	138	93.2		21	AAB37001	
	4	138	93.2		21	AAB37002	Bcl2 polypeptide B
	U	138	93.2		21	AAB37003	
	6	138	93.2		22	AAB70370	Shorter murine BAD
	7	138	93.2		17	AAR95168	bcl-x(L)/bcl-2 ass
	æ	138	93.2		19	AAW61315	Murine BCL-XL/BCL-
	9	138	93.2		19	AAW61316	Mutant BCL-XL/BCL-
	10	138	93.2		19	AAW61317	
	11	138	93.2		19	AAW61318	Mutant BCL-XL/BCL-

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XF

New peptide conjugates for modulating apoptosis or for inhibiting

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45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
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682	242	241	236	232	232	186	186	181	171	125	20	18	16	16	16	16	16	26	26	59	59	59	59	23	168	168	168	168	168	166	567	204	204
22	21	21	21	21	21	21	21	21	21	21	22	22	21	20	21	20	17	22	21	19	19	19	19	17	22	22	22	21	19	18	22	22	19
ABB52836	AAG25576	AAG54028	AAG54679	AAG54029	AAG25577	AAG54030	AAG25578	AAG25217	AAG25218	AAG25219	AAB70380	AAB70379	AAB37029	AAY05421	AAB37028	AAY05422	AAR95163	AAB70371	AAY9632¶	AAW61322	AAW61321	AAW61320	AAW61319	AAR95166	AAG67688	AAB48287	AAB70368	AAB13512	AAW55779	AAW32476	AAU00220	2	AAW58832
Escherichia coli p	İs	Arabidopsis thalia	Arabidopsis thalia	ŠŢ	Arabidopsis thalia					psis	domain	BH3 domain re	Bcl2 polypeptide B	_	Bcl2 polypeptide В	Mouse BAD BH3 doma	bcl-x(L)/bcl-2 ass	BAD BH3 consensus	ian Bad	Mutant BCL-XL/BCL-	BCL-XL,	BCL-XL,	L-XL/	(L)/bc	acid	Bad protein	BAD n	cell prolif	n Bcl·xL/Bcl·	BBC6 protein for r	Bad-DTTR apoptosis	muri	Murine BAD protein

## ALIGNMENTS

DR A	PΙ	XX	PA.	PR	××	PF	۲ ر د د	7:	X Y	X	SO	××	X	KW	ΚW	XΨ	KΨ	ΚW	XX	DE :	X	D.	×	A.	¥ E	AAB3/U55	RESULT	
WPI; 2000-679325/66.	Huang Z, Wang J, Zhang Z, Shan S, Lu Z;		(UYJE-) UNIV JEFFERSON THOMAS.	07-APR-1999; 99US-0128202.		06-APR-2000; 2000WO-US09352.	12-001-2000.	10-00-000	WO200059526-A1.		Homo sapiens.		stroke; myocardial infarction.	melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS;	colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma;	apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate;	cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad;	Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective;		Bcl2 polypeptide BH3 domain peptide #55.		28-FEB-2001 (first entry)		AAB37055;	AADDIVOO STAUMATH, PEPLINE; ZO AA.	/CVV		

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ARBSOLT
AABSTOE
AABSTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The invention relates to a peptide conjugate having the formula:

(C (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached
(C to the N-terminus of the peptide, or a side chain of the peptide where
(C the functional group of the side chain is NH2 or OH; or X = O or NH,
(CC when the R-X group is attached to the C-terminus of the peptide, or a
(C side chain of the peptide, where the side chain functional group is COOH
(C or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one
(C or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally
(C on containing one
(C or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally
(C phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group,
(C alkyl group, or benzyl. The peptides AAB37001-B37058 represent examples
(C of the peptide portion of the conjugate. The peptides represent analogues
(C of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of
(C the BH3 domain of the cell death agonist Bad. The peptide conjugate is
(C suseful for modulating apoptosis in the cells of a subject, or for
(C reversing B cell lymphoma/leukemia 2 (Bcl-2)-mediated blockage of
(C subject afflicted with a cancer characterized by cancer cells that
(C express Bcl-2. The cancer includes prostate, colorectal, gastric,
(C non-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or
(C conjugate is also useful for treating disorders characterized by
(c increased apoptosis, e.g. neurodegenerative disorders, acquired
(C inmunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bc12
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treating neurodegenerative disorders, stroke, or cancer -
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                                                                                                                                07-APR-1999;
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                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                  stroke;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-FEB-2001 (first entry)
                                                           (UYJE-) UNIV JEFFERSON THOMAS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 KNLWAAQRYGRELRRMSDEFEGSFKGLK 28
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   Zhang Z,
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Pred. No. 1e-15;
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Sequence

27

AA;

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CC (R-X)n-peptide where n = 1-10; X = C-0, when the R-X group is attached cc to the N-terminus of the peptide, or a side chain of the peptide where cc the functional group of the side chain is NH2 or OH; or X = O OR NH. CC when the R-X group is attached to the C-terminus of the peptide or a cc side chain of the peptide, where the Side chain functional group is COH cc or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl containing one cc alkyl group, or benzyl where the side chain functional group is COH cc phenyl optionally monosubstituted with a 1-SC straight or branched chain alkyl group, or benzyl where peptides AAB37001-B3705B represent examples cc of the peptide portion of the conjugate. The peptides represent analogues of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of the BH3 domain of the cell death agonist Bad. The peptides conjugate is useful for modulating apoptosis in the cells of a subject, or for cc reversing B cell lymphoma/leukemia 2 (Bcl-2)-mediated blockage of gunction. In particular, the peptide conjugate is useful for treating a cancer cells. It is also useful for inhibiting Bcl-2 conjugate is cancer includes prostate, colorectal, gastric, consess Bcl-2. The cancer includes prostate, colorectal, gastric, conjugate is also useful for traating disorders characterized by cancer cells si also useful for traating a concersed apoptosis, e.g. neurodegenerative disorders, acquired confugate is also useful for traating disorders characterized by inmunodeficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 18; Page 19; 74pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to a peptide conjugate having (R-X)n-peptide where n=1-10; X=C=0, when the R-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              peptide conjugates for modulating apoptosis or for inhibiting B lymphoma/leukemia 2 (Bcl-2) function, especially useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2000-679325/66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the formula:
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В Ş Matches Query Match Best Local 1 knlwaaqrygrelrrmsdefegsfkgl 27 1 KNLWAAQRYGRELRRMSDEFEGSFKGL 27 l Similarity 27; Conserv Conservative 96.6%; 0: Score 143; Pred. No. Mismatches ; DB 21; 5.7e-15; 0 Length Indels 27 0; Gaps 0

RESULT AAB37001 28-FEB-2001 (first entry) AAB37001 standard; w peptide; 26 A

BC12 polypeptide BH3

domain

peptide #1

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastcma; stroke; myocardial melanoma; lymphocytic leukemia; neurodegenerative

Homo sapiens.

WO200059526-A1

06-APR-2000; 2000WO-US09352

07-APR-1999; 99US-0128202

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AAB37002

AAB37002

XX

AC AAB3

XX

DT 28-F

DT 28-F

DT 28-F

CXX

CYC

KW CAYC

KW CAYC

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CC (R-X)n-peptide where n = 1-10; x = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COH CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B37058 represent examples CC of the peptide portion of the conjugate. The peptides represent analogues of the BH3 domain of the cell death agonist Bad. The peptide conjugate is caseful for modulating apoptosis in the cells of a subject or for CC reversing B cell lymphoma/lukemia 2 (Bcl-2)-mediated blockage of subject afflicted with a cancer characterized by cancer cells that CC express Bcl-2. The cancer includes prostate, colorectal, gastric, CC non-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or cacute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating disorders, acquired immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Best Local
                                                                                                                                                                                                                                                 Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bccl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
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    12-OCT-2000
                                                                                    WO200059526-A1
                                                                                                                                                                Homo sapiens.
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26; Conserv
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Pred. No. 3.
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Homo sapiens

stroke; myocardial infarction

melanoma; lymphocytic leukemia; neurodegenerative

disorder;

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bci-2 superfamily; Bad damain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma;

Bcl2 polypeptide BH3 domain peptide #3.

28-FEB-2001

(first entry)

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RESULT
AAB3703
ID AAB3
XX AAB3
AC AAB3
AC AAB3
XX EBCL2
XX BCL2
XX BCL2
XX CYtc
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached CC to the functional group of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC when the R-X group is attached to the C-terminus of the peptide, or a CC consult of the peptide, where the side chain functional group is COOH CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B37058 represent examples cof the peptide portion of the conjugate. The peptide represent analogues of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC paptide for modulating apoptosis in the cells of a subject, or for capoptosis in cancer cells. It is also useful for inhibiting Bcl-2 conjugate is in cancer cells. It is also useful for inhibiting Bcl-2 conspets Bcl-2. The cancer includes prostate, colorectal, gastic, or con-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or acute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is useful for peptide conjugate is useful for treating and conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is useful for treating and conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is such and the peptide conjugate is mentioned by cancer cells that conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired
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Best Local S
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Best Local S
Matches 26
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immunostimulant; neuroprotective; nootropic; antischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer;
               cytostatic;
                                                             Shorter
                                                                                     02-MAY-2001
                                                                                                             AAB70370
                                                                                                                                     AAB70370 standard:
                                                                                                                                                                                                                                                                                                         Sequence
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                                     associated cell death regulator; BAD;
                                                                                                                                                                                                                                                                                                         A,
                                                           BAD mutant amino acid sequence
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                                                                                                                                   protein;
                                                                                                                                                                                                                                                        93.2%; Score 138; 100.0%; Pred. No.
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                                    mutant; apoptosis;
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The present invention describes an isolated or synthetic polypeptide (C (I) comprising a less than full length amino acid sequence of a mutant CC Bcl-XL/Bcl-2 associated cell death regulator polypeptide (BAD) or its C fragment, which contains amino acid substitutions at Seril8 of a murine BAD). (I) has immunostimulant, neuroprotective, BAD (shorter murine BAD). (I) has immunostimulant, neuroprotective, antisribric, antisribric, antisribric, and immunostimulant, neuroprotective, and interthritic, antisribric, and immunosuppressive activities, and can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC can be used as an apoptosis inducer or inhibitor. BAD polypeptides and drugs cfor activity that promote cell survival or apoptosis. Other uses include cidentified and (mutant) BAD polypeptides are useful in treating compounded cidentified and (mutant) BAD polypeptides are useful in treating compounded cidenth, reperfusion cell death, wound healing, cancer, viral infections, clymphoproliferative conditions, arthritis, infertility, inflammation and cultonimune diseases. The present sequence represents a specifically and compounds architics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seri13 -
Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200110888-A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                15-FEB-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Page 148-149; 157pp; English
    162
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    AA
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AAR95168
                   RESULT
                                                                                            Query Match
Best Local :
                                                                                   Matches
AAR95168 standard; Protein;
                                               86
                                                                                           Local
                                                     2 NLWAAQRYGRELRRMSDEFEGSFKGL
                                               nlwaaqrygrelrrmsdefegsfkgl 123
                                                                                  l Similarity
26; Conserv
                                                                                  Conservative
                                                                                          93.2%; Score 138;
100.0%; Pred. No.
                                                                                  0;
  ₿
                                                                27
                                                                                  Mismatches
                                                                                           DB 22;
2.4e-13;
                                                                                   0
                                                                                                     Length 162;
                                                                                   Indels
                                                                                  0;
                                                                                  Gaps
                                                                                  0;
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AAR95168

06-JAN-1997 (first entry)

bcl-x(L)/bcl-2 associated death promoter protein.

Epitope; murine; bcl-x(L)/bcl-2 associated death promoter; Bad; stroke; polypeptide; bcl-x; cell death; regulate; BH1; BH2; apoptotic cell deat cytokine deprivation; IL-3 dependent cell line; immunodeficiency; AIDS;

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RESULT
AAW6131
ID AJ
XX
AC A
XX
DT (
XX
DE )
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Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                          This sequence represents the murine bcl-x(L)/bcl-2 associated death promoter (Bad) gene. Bad is a 22.1 kD protein which interacts with bcl-2 and bcl-x proteins and regulates cell death. It has homology to the bcl-2-related family clustered in the BH1 and BH2 domain. Bad has been found to hybridise to bcl-x(L) and bcl-2 in yeast two-hybrid assays and in vivo in mammalian cells. Overexpressed Bad counters the death inhibitory activity of bcl-x(L), but is much less effective at countering the death inhibitory activity of bcl-2. Bad expression can accelerate apoptotic cell death induced by cytokine deprivation in an IL-3 dependent cell line expressing bcl-x(L), and its also counters the death repressor activity of bcl-x(L). Bad competes with Bax for binding to bcl-x(L). Bad may be used to identify agents which inhibit its binding to bcl-2 or bcl-x(L) to form heterodimers. Such agents may be used to treat neurodegenerative diseases, immunodeficiency diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Polynucleotide encoding bcl-x(L)/bcl-2 associated death promoter -useful to treat neoplasia and apoptosis and to identify agents inhibiting its binding to bcl-2 or bcl-x(L) to form heteromultimers
                      Murine BCL-XL/BCL-2 associated cell death regulator
                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 3; Fig 1; 130pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Korsmeyer SJ
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                                                          07-OCT-1998 (first entry)
                                                                                              AAW61315;
                                                                                                                                AAW61315
                                                                                                                                                                                                                           140
                                                                                                                                                                                                                                           2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
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                                                                                                                                                                                                                         nlwaaqrygrelrrmsdefegsfkgl 165
                                                                                                                                                                                                                                                                                                   26;
                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAT29479
                                                                                                                              standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                            204
                                                                                                                                                                                                                                                                                                                                                                                                                                senescence
                                                                                                                                                                                                                                                                                                   Conservative
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111..130
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38..61
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147..149
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                                                                                                                                                                                                                                                                                                                      93.2%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "BH1 conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                ischaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  senescence; ischaemia; neoplasia.
                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                      Score 138; [
; Pred. No. 3.
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                                                                                                                                                                                                                                                                                                                    DB 17;
3.2e-13;
                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                    Length 204;
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                                                                                                                                                                                                                                                                                                   0;
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ID AAW
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> Matches Query Match Best Local

1 Similarity 26; Conserv

Conservative

0;

Mismatches

Indels

0;

0

DB 19; 3.2e-13; hes 0;

93.2%;

140

2 NLWAAQRYGRELRRMSDEFEGSFKGL 27

nlwaagrygrelrrmsdefegsfkgl 165

Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; Mutant BCL-XL/BCL-2 associated cell death regulator #1.

BAD protein;

07-OCT-1998

(first entry)

AAW61316 standard; Protein;

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9

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C? The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell CC death regulator) proteins, having an amino acid other than Ser at CC postition 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence is the murine BAD protein Also described are: (1) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC increases intracellular delivery. Mutant BAD proteins are used to treat CC or prevent disease associated with reduced apoptosis, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, contains and autoimmune disease. Polymuclactide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease. Polymuclactide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers CC ading or ischaemic cell death. The apoptosis such as AIDS, neurodegeneration, CC determined by measuring relative amounts of phosphorylated and noncell for the specified Ser, forming a proteins have greater death-promoting activity than wild-type BAD which can become CC phosphorylated on the specified Ser, forming a product that does not the transport of the specified Ser, forming a product that does not contain the cytosol, thus promoting cell survival. The mutants with CC ser substituted cannot bind 14-3-3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-261422/23
N-PSDB; AAV27833.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD protein; serine substituted mutant; apoptosis; cancer; viral infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Fig 10; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              viral infection
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UNIW ) UNIV WASHINGTON.
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                                                                                       Sequence
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                                                                                          204
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Score 138; I; Pred. No. 3.
                     Length 204;
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RESULT 10
AAM61317
ID AAM613
XX
AC AAM613
XY
DT 07-OCT
XX
DB Mutant
XX
KW Murine
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                                                                                                                                                                                                                                                                                                                                                                                        CC The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell CC death regulator) proteins, having an mino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 has sequence. The position 12 and/or 136, relative to the murine BAD 204 has sequence. The CC present sequence represents a mutant BAD protein. Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC inflammation and autoimmune disease. Polynucleotise sequences encoding CC inflammation and autoimmune disease. Polynucleotide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful CC in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC aging or ischaemic cell death. The apoptotic status of cells is determined by measuring relative amounts of phosphorylated and non-CC phosphorylated BAD, by usual immunoassays. Mutant BAD proteins have composited Ser, forming a product that does not the total activity than wild-type BAD which can become CC phosphorylated on the specified Ser, forming a product that does not the cooldmerise with BCL-2 or BCL-XL but instead binds to 14-3-3 family CC ser substituted cannot bind 14-3-3.
                                                                                                                                                                                                                                                                                                     Matches
   Murine; mouse;
                                    Mutant BCL-XL/BCL-2 associated cell death regulator #2.
                                                                                                         AAW61317;
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                                                                        07-OCT-1998
                                                                                                                                              AAW61317 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 7; Page 59; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or
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DB; AAV27834.
                                                                                                                                                                                                                                                                                                 Similarity 100.
26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                        204 AA;
                                                                       (first entry)
BCL-XL/BCL-2 associated cell death regulator; BAD protein;
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                                                                                                                                              Protein;
                                                                                                                                                                                                                                                                                                                      93,28;
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                                                                                                                                                                                                                                                                                                 Score 138; DB 19;
; Pred. NO. 3.2e-13;
0; Mismatches 0;
                                                                                                                                              204
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XXXXXXXXXX

07-OCT-1998

(first entry)

Protein;

0;

Mutant BCL-XL/BCL-2 associated cell death regulator #3

Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD protein;

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RESULT 11
AAW61318
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                                                                                                                                                                                                                                                                                       CC death regulator) proteins, having an mano acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence represents a mutant BAD protein. Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability, (2) CC fusion proteins of mutant BAD protein able to decrease cell viability, (2) CC fusion proteins of mutant BAD proteins are used to treat CC or prevent diseases associated with reduced apoptosis, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, cancer, CC viral infection, lymphoproliferation, arthritis, infertility. Cancer, CC inflammation and autoimmune disease, polynucleotide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful CC in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC aging or ischaemic cell death. The apoptotic status of cells is concerning to the complex of the complex of the complex of the complex of the specified Ser, forming a proteins have composited BAD, by usual immunossays. Mutant BAD proteins have composited ser, forming a product that does not the treatment of the specified Ser, torming a product that does not contain the cytosol, thus promoting cell survival. The mutants with cC ser substituted cannot bind 14-3-3.
                                                                                                                                                                Query Match
Best Local S
Matches 26
AAW61318 standard;
                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 7; Page 60; 95pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UNIW ) UNIV WASHINGTON
                                                                                      1998-261422/23.
DB; AAV27835.
                                                                                                                                                                  l Similarity
26; Conser
                                                                                                                                                                                                                                                            204
                                                                                                                                                                93.2%; So ilarity 100.0%; I Conservative 0;
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                                                                                                                                                                                Score 138;
Pred. No.
                                                                                                                                                                  Mismatches
                                                                                                                                                                                                     DB 19;
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RESULT 1
AAW58832
ID AAW5
XX
AC AAW5
AC AAW5
XX
AC AAW5
AC AAW5
XX
AC AAW5
AC AAW5
XX
AC AAW5
AC A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell CC death regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence represents a mutant BAD protein. Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD with a heterologous polypeptide that CC or prevent diseases associated with reduced apoptosis, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, CC inflammation and autoimmune disease. Polypholeotide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers CC and inhibitors of serine-phosphatase. Inhibitors are potentially useful in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC aging or ischaemic cell death. The apoptotic status of cells is. CC determined by measuring relative amounts of phosphorylated and non-phosphorylated BAD, by usual immunoassays. Mutant BAD proteins have CC greater death-promoting activity than wild-type BAD which can become CC phosphorylated on the specified Ser, forming a product that does not the topic with BCL-2 or BCL-XL but instead binds to 14-3-3 family CC proteins in the cycosol, thus promoting cell survival. The mutants with CC Ser substituted cannot bind 14-3-3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-261422/23
N-PSDB; AAV27836.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               18-OCT-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-OCT-1997;
                                                                Murine BAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UNIW ) UNIV WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-APR-1998
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   serine substituted
BAD protein; Bcl-XL/Bcl-2 associated
                                                                                                                                                                                   AAW58832;
                                                                                                                      23-JUL-1998
                                                                                                                                                                                                                                            AAW58832 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                 140
                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 NIWAAORYGRELRRMSDEFEGSFKGL 27
                                                                                                                                                                                                                                                                                                                                                                                             nlwaaqrygrelrrmsdefegsfkgl 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7; Page 60-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 93.2%;
l similarity 100.0%;
26; Conservative
                                                            protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            204 AA;
                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96US-0733505
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                                                                                                                                                                                                                                            protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    p; Score 138; DB
p; Pred. No. 3.2
p; Mismatches
                                                                                                                                                                                                                                               204
   cell death regulator; 14-3-3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 3.2e-13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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RESULT 13
AAB70369
ID AAB703
XX AAB703
AC AAB703
XX 02-MAY
XX 02-MAY
XX Unmuno
XX 1mmuno
KW 1mmuno

02-MAY-2001

(first entry)

AAB70369;

AAB70369 standard;

protein;

204

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immunostimulant; neuroprotective; nootropic; antiischaemic; vucytostatic; antiviral; antiarthritic; antiinflammatory; wound immunosuppressive; apoptosis inducer; apoptosis inhibitor; can immunodeficiency disease; neurodegenerative disease; viral infischaemic cell death; reperfusion cell death; arthritis; infest lymphoporoliferative condition; inflammation; autoimmune disease

autoimmune disease

il infection; infertility; cancer; Bcl-XL/Bcl-2 associated cell death regulator; BAD; Longer murine BAD mutant amino acid sequence SEQ ID NO:2.

mutant; apoptosis;

healing

ď

140

niwaaqrygrelrrmsdefegsfkgl 165

0;

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Ş
                                                     Matches
                                                                   Query Match
Best Local
                                                                                                                                                                                     This sequence represents a novel serine-phosphorylated protein, BAD (BC1-X1/BC1-2 associated cell death regulator). The serine residue is phosporylated in a post-translational modification and allows binding to the 14-3-3 protein which is a signal transduction regulator. Modulators of phosphorylated BAD, which act through inhibition/activation of a phosphoserine phosphatase, are useful for preventing/treating increased/decreased apoptosis in a cell. The increased apoptosis may result from immunodeficiency disease, senescence, neurodegenerative disease, ischaemic cell death, reperfusion cell death, infertility and wound-healing. Decreased apoptosis may result from cancer, viral inflammation and autoimmune diseases. Measuring the amount of phosphorylated compared to unphosphorylated BAD polypeptide and/or total phosphorylated compared to unphosphorylated BAD polypeptide and/or total
                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Serine-phosphorylated Bcl-X-1/Bcl-2 Associated cell Death regulator polypeptide - useful for modulation of apoptosis associated with,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-SEP-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          serine phosphorylation; post-ti
signal transduction regulator;
                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1998-207049/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Korsmeyer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     12-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9809643-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VIND ( MIND)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  signal transduction regulator; phosphoserine phosphatase; senescence; immunodeficiency disease; neurodegenerative disease; infertility; cancer, viral infection; lymphoproliferative condition; arthritis; inflammation; autoimmune diseases.
                                                                   Local Similarity
2 NLWAAQRYGRELRRMSDEFEGSFKGL
                                                                                                                                                                         in a cell is useful for determining the apoptotic state of a cell
                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Fig 8; 61pp; English
                                                    26;
                                                                                                                                        204 AA;
                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96US-0707868
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97WO-US15871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunodeficiency diseases
                                                                   93.2%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           post-translational modification; apoptosis;
                                                    0;
                                                                   Score 138;
Pred. No.
                                                    Mismatches
                 27
                                                  DB 19;
3.2e-13;
hes 0;
                                                                                    Length
                                                                                      204;
                                                    0;
                                                    Gaps
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RESULT
AAU002
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                                                                                                                                                                                                                                                                                                                                                                                                                   В
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local S
Matches 26
Chimeric -
                                                             Mouse: Bad-DTTR: apoptosis; cancer; spinal muscular atrophy; diphtheria toxin receptor binding domain; DTR; neoplasm; tumour; hyper-proliferation; Alzheimer's disease; neurodegenerative disorder; transient ischaemic neuronal injury; stroke; spinal cord injury;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zhou
                                          Huntington's disease
                                                                                                                                                                        Bad-DTTR apoptosis-modifying
                                                                                                                                                                                                                   31-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Serl18, Serl55 or Serl13 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI:
                                                                                                                                                                                                                                                                AAU00220;
                                                                                                                                                                                                                                                                                                           AAU00220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 148; 157pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (APOP-) APOPTOSIS TECHNOLOGY INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-FEB-2001
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Synthetic.
                                                                                                                                                                                                                                                                                                                                                                                                            invention
                                                                                                                                                                                                                                                                                                                                                   14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                        standard;
Mug
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                   (first entry)
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                                                                                                                                                                                                                                                                                                        Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       93.2%;
                                                                                                                                                                                                                                                                                                           567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 138;
Pred. No.
                                                                                                                                                                        fusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                        protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .2e-13;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 204;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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BBC6 protein 15-JAN-1998 AAW32476; AAW32476

for regulating cell death

(first entry)

standard;

Protein;

166 B

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RESULT 15
AAW32476
ID AAW324
XX
AC AAW324
AC AAW324
XX
DT 15-JAN
XX
DE BBC6 p
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                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                           inker to diphtheria toxin translocation domain (DTTR). The functional apoptosis modifying fusion protein is capable of binding a target cell and integrating into or crossing a cellular membrane of the target cell. The apoptosis-modifying fusion protein comprises at least two domains: the DTR domain, which targets the fusion protein to the target cell and the Bcl-XL domain, which modifies an apoptotic response of the target cell. The fusion protein is useful for modifying (inhibiting or enhancing) apoptosis in a target cell, such as neuron, lymphocyte, cancer, neoplasm, macrophage, epithelial, stem, tumour or hyper-proliferative cell or an adipocyte. It is also useful for reducing apoptosis in a subject after transient ischaemic neuronal injury, especially spinal cord injury. The fusion protein may be used to treat various diseases and injury conditions through inhibition or enhancement of apoptotic cellular response, including neurodegenerative discreters such as Alzheimer's disease, Huntington's disease, spinal muscular atrophy, stroke episodes and unregulated cell growth as in tumours and various cancers. The apoptosis-modifying fusion protein can be delivered cells accers. The apoptosis-modifying fusion protein can be delivered cells.
                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel fusion protein for modifying apoptosis in target cell and reducing apoptosis after transient ischaemic neuronal injury, has two domains which targets protein to a cell and modifies apoptotic response of cell
                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The sequence represents the amino acid sequence of Bad-DTTR modifying fusion protein comprising Bad gene sequence fused milker to diphtheria toxin translocation domain (DTTR). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chimeric -
Chimeric -
                                                                                                                                                                            Youle RJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (HARD ) HARVARD COLLEGE.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        16-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-AUG-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2001-218343/22.
DB; AAS00248.
                                                                                                                                                                                                                                             26;
                                                                                                                                                                                                                                          Similarity 100
26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Page 59-61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Liu X,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Corynebacterium diptheriae Synthetic.
                                                                                                                                                                                                                                                                                                                           567
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3..12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Collier
                                                                                                                                                                                                                                    93.2%; 5u-
100.0%; Pr
100.0%; 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          65pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "10x histidine
                                                                                                                                                                                                                                        ; Score 138; DB
%; Pred. No. 9.8
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English
                                                                                                                                                                                                                                           . 9.8e-13;
ches 0;
                                                                                                                                                                                                                                                                           DB 22;
                                                                                                                                                                                                                                                                          Length 567;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              apoptosis-
via a short
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                                                                                                                                                                                                                                          Gaps
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Page 9
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Search completed: September 20, 2002, 10:35:59 Job time: 427 sec
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                                                                                            QY
                                                                                                                       Query Match 77.0%;
Best Local Similarity 91.7%;
Matches 22; Conservative (
                                                                                                                                                                                                                  The present sequence represents a protein of 166 amino acids. The sequence is disclosed as being a protein called BBE66 which regulates cell death through interaction with Bcl-2. The DNA may be used for the production of the recombinant protein, which can be used in unspecified therapeutic or diagnostic procedures, as a molecular weight marker, and to raise antibodies that can be used in unspecified diagnostic or therapeutic applications and to reduce or eliminate the biological activity of the BBC6 protein in vivo.
                                                                                                                                                                                                                                                                                                                                              Claim 1; Column 11-12; 7pp; English.
                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                          Isolated BBC6 gene - encodes a protein that regulates cell death through interaction with \ensuremath{\mathsf{Bcl-2}}
                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1997-447980/41.
N-PSDB; AAT91561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Xudong Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (CLON-) CLONTECH LAB INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        18-JUN-1996;
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                                                              US5663316-A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                               166 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96US-0665617
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                                                                                                                     Score 114; DB 18; Length 166; Pred. No. 1.2e-09; 0; Mismatches 2; Indels
                                                                                                                       0;
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27, Appl
18, Appl
18, Appl
240, Appl
240, Appl
240, Appl
27, Appl
270, App

Sequence

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Scoring table:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    seq length: 0
seq length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query
Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  September 20, 2002, 10:37:21; Search time 75.64 Seconds (without alignments) 9.042 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-544-664-55
148
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Copyright (c) 1993 - 2000 Compugen
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    US-08-33-565-2
US-08-661-479-2
US-08-733-505A-12
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-65-617-2
US-08-985-335-1
US-08-985-335-1
US-08-985-335-1
US-08-985-335-1
US-08-985-335-7
US-08-61-479-10
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-58
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Sequence 2, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 1, Appli
Sequence 7, Appli
Sequence 1, Appli
Sequence 10, Appli
Sequence 10, Appli
Sequence 5, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 6, Appli
Sequence 6, Appli
Sequence 3, Appli
                                                                                                          NAME/KEY: Protein
; LOCATION: 1..204
; OTHER INFORMATION:
; OTHER INFORMATION:
; OTHER INFORMATION:
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US-08-333-565-2
; Sequence 2, Appl
; Patent No. 56228
                                                                                                                                                                                                                                   COMPUTER REALABLE FORM:

MEDIUM TYPE: Ploppy disk

COMPUTER: IHM PC COMPUTEN: DC-DOS/MS-DOS

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PATENTIO Release #1.0, Ve

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/333,565

FILING DATE: 31-OCT-194

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Smith, William M

REGISTRATION NUMBER: 30,223

REFERENCE/DOCKET NUMBER: 15726A-00

TELEFONMUNICATION INFORMATION:

TELEFONMUNICATION INFORMATION:

TELEFONMUNICATION INFORMATION:

TELEFONMUNICATION INFORMATION:

SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
TYPE: amino acid
STRANDENESS: Single
TOPOLOGY: Linear
TOPOLOGY: Linear
TOPOLOGY: Linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: TITLE ON:

TITLE OF INVENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH

TITLE OF INVENTION: REGULATOR

NUMBER OF SEQUENCES: 59

CORRESPONDENCE ADDRESS:

ADDRESSEE: Townsend and Townsend Khourie and Crew

STREET: 379 Lytton Avenue

CITY: Palo Alto

STATE: California

COUNTRY: US
  Query Match 93...
Best Local Similarity 100
Matches 26; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    93.2%; Score 138; DB 1;
100.0%; Pred. No. 1e-13;
tive 0; Mismatches 0
                                                                                                                             /note= "Deduced amino acid of mouse BAD."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               US-09-651-656-27
US-08-718-738-18
US-08-718-738-18
US-08-21-844-18
US-09-221-848-40
US-09-29-8438-40
US-09-39-37115-3-40
US-09-38-3718-40
PCT-US-33-1115-40
US-09-359-161-7
US-08-997-362-170
US-09-324-542-170
US-09-324-542-170
US-08-997-362-94
US-08-997-362-94
US-08-997-362-94
US-08-997-362-94
US-08-997-362-94
US-08-997-362-94
US-08-997-362-94
US-09-324-542-94
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         0;
                                               Length 204;
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Gaps

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Result

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RESULT 3
US-08-733-505A-
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LOCATION: 1..204
OTHER INFORMATION: /note= "Deduced amino acid sequence;
OTHER INFORMATION: of mouse BAD."
US-08-661-479-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 2
US-08-661-479-2
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Sequence 1, Application US/08733505A
Patent No. 5856445
GENERAL INFORMATION:
APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/08661479 Patent No. 5834209 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPOUTER: IBM PC compatible
OPERATIOG SYSTEM: PC-LOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/661,479
FILING DATE: 11-JUN-1995
CLASSIFICATION DATA:
APPLICATION NUMBER: US 08/333,565
PRIOR APPLICATION NUMBER: US 08/333,565
PRIOR APPLICATION NUMBER: 31-CCT-1994
ATTORNEY/ACENT INFONMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 15726a-000700
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
                                                                                                                                                                                                                                                                                                                            Matches
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INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGUE 1 14
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ZIP: 94301
COMPUTER READABLE FORM:
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: protein FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS
LENGTH: 204 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: BC1-x/Bc1-2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSES: Townsend and Townsend Khourle and Crew
                                                                                                                                                                                                                             CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
                                                                                                                                                                                                                                                                                                                       26; Conservative
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                                                                                                                                                                                                                                                                                                                       93.2%; Score 138; DB 2; Length 204; 100.0%; Pred. No. 1e-13; Live 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 12, Application US/08733505A Patent No. 5856445 GENERAL INCRMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEFAX: (314) 727-6092
INFORMATION FOR SEO ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/OOCKET NUMBER: 9654
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
CLASSIFICATION: 530
ATTORREY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9554
TELECOMMUNICATION INFORMATION:
                                                                                                                                          COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION MUMBER: US/08/733,505A
FILING DATE:
                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 60

CORRESPONDENCE ADDRESS:

ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
CITY: ST. LOUIS
CITY: ST. LOUIS
STRITE: MISSOURI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: KORSMEYE TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140 NIWAAQRYGRELRRMSDEFEGSFKGL 165
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CITY: ST.
STATE: MI
                                                                                                                                 APPLICATION NUMBER: US/08/733,505A
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26; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                    KORSMEYER, STANLEY J.
WVENTION: SERINE SUBSTITUTED MUTANTS OF
WENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                      USA
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100.0%; Pr
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                     965458
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TELEPHONE:

(314) 727-5188

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                                                                                                                                  ; TOPOLOGY: 11; MOLECULE TYPE: US-08-733-505A-13
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Patent No. 5856445
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                                                           Matches
                                                                                       Query Match
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                                                                         Best Local
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                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                  REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
TELEPAX: (314) 727-6092
                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: peptide
                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION: NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
CITY: S
                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
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Local Similarity 100.0%;
les 26; Conservative (
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                                                                                                                                                                              STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STATE: MISSOURI
                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
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                 2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
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                                                           26;
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                                                         Similarity 100
26; Conservative
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                                                                                                                                                                                            amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08733505A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: HOWELL & HAFERKAMP, L.C. 7733 FORSYTH BLVD., SUITE 1
                                                                                                                                                                                                           204 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            204 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KORSMEYER,
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, 727-6092
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                                                                         93.2%;
100.0%;
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                                                                                                                                                                                                                                                                                                   965458
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; Pred. No. 1e:
0; Mismatches
                                                           0;
                                                                                     Score 138;
                                                                         Pred. No.
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                                                           Mismatches
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le-13;
                                                                         DB 2;
1e-13;
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                                                           Indels
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RESULT

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US-08-717-123-3
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                                                                                                                                                                                                                                                                                                                                           Sequence 3, Applic Patent No. 5965703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (314) 727-6092 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                 APPLICANT: Horne, William A. APPLICANT: Oltersdorf, Tilman TITLE OF INVENTION: Human BAD TITLE OF INVENTION: Acids and NUMBER OF SEQUENCES: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 96
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version #1.30 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/733,505A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT:
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 77
                                                                                                                                                                                                                                                                                                                                                                                                                                                 140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U
ZIP: 63105
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                                                                                                           COUNTRY: C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRANDEDNESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
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                                                                                                                                             STATE:
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                                                                                                                                                              San Diego
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 204 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                          Application US/08717123
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                                                                                                                                           California
                                                                                                                                                                           E: Campbell and Flores
4370 La Jolla Village Drive,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7733 FORSYTH BLVD., SUITE 1400
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VERVION: SERIME SUBSTITUTED MUTANTS OF
VENVION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
EQUENCES: 60
                                                                                                                        United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
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US/08/717,123

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; MOLECULE TYPE:
US-08-665-617-2
                   Query Match
Best Local Similarity
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Patent No. 5663316
GENERAL INFORMATION:
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Best Local Similarity
                                                                                                                                                                                                TELEFAX: (352) 372-5800 INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 166 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-9949
INFORMATION FOR SEO ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                 CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Sallwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: CL-8
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Xudong, Yin
TITLE OF INVENTION: GeI
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-ID 1929
TELECOMMUNICATION IMPORMATION:
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NAME: Campbell, Cathryn A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Saliwanchik & Saliwanchik STREET: 2421 N.W. 41st Street, Suite A-1 CITY: Galoesville STATE: Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0
FILING DATE: 20-SEP-1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                   TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REGISTRATION NUMBER:
 2 NLWAAQRYGRELRRMSDEFEGSFK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                  Conservative
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                                                                                                                                                    linear
                                                                                                                                                                                                                                                                     (352) 375-8100
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                                                                                                                                   protein
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96.2%;
                                                77.0%;
91.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                       us/08/665,617
                                  0
                               Score 114; DB 1; I
Pred. No. 3.7e-10;
"""" tches 2;
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Pred. No. 2.9e-13;
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                                                              Length 166;
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RESULT 10
US-08-985-335-1
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                                                                                                                                                                                                                         Patent No.
GENERAL II
                                                                                                                                                                                                                                                       Sequence 1,
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                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE/DOCKET NUMBER: P--
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER: US/08/717
FILING DATE: 20-SEP-1996
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                   APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                   APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSEE: Campbell and Flores
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                CORRESPONDENCE ADDRESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Horne, William A. APPLICANT: Oltersdorf, Tilman
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                   NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                            103 NIWAAQRYGRELRRMSDEFVDSFK 126
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STATE: California
COUNTRY: United States
                                 STREET:
 STATE:
                                                 ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                            Match 77.0%;
Local Similarity 91.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
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                                                                                                                                                                                                                         INFORMATION:
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Palo Alto
CA
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                                                                                                                                                                                                                                                          Application US/08985335
                                 E: Incyte Pharmaceuticals,
3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   168 amino acids
                                                                                                                                                     Shah, Purvi
                                                                                                                                                                       Lal, Preeti
                                                                                                                                                                                       Yue, Henry
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                       Hillman, Jennifer L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15
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Pred. No. 3.8e-10;
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COMPUTER READABLE FORM: MEDIUM TYPE: Diskett

IBM Compatible

Diskette

COUNTRY:

USA

94304

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US-08-985-335-7
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Best Local Similarity
Matches 22; Conserv
                                                         ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSeQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/985,335
FILING DATE: Filed Herewith
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
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SOFTWARE: FastSEQ for Windows
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/985
FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                    SENERAL INFORMATION:
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INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                APPLICANT: COTIEY, Neil C.
TITLE OF INVENTION: PROTIFERATION
TITLE OF INVENTION: PROLIFERATION
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acid
                                              PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LIBRARY: SYNOR CLONE: 358673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: 650-855-0555
ATTORNEY/AGENT INFORMATION
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103 NLWAAQRYGRELRRMSDEFVDSFK 126
                                                                                                                                                                                                 COUNTRY: U:
ZIP: 94304
                                                                                                                                                                                                                                STREET: 3174 POICITY: Palo Alto
STATE: CA
                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 NLWAAQRYGRELRRMSDEFEGSFK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         : 168 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Application US/08985335
5080847
                                                                                                                                                                                                                                                               E: Incyte Pharmaceuticals, Inc. 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                  USA
                                                                                                                                                                                                                                                                                                                                                                                                                   Yue, Henry
                                                                                                                                                                                                                                                                                                                                                                                                   Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                   Hillman, Jennifer L.
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91.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1, Approximately No. 6281334
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 77.0%;
Best Local Similarity 91.7%;
                                                                                    TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acid
                                                                                                                                                      FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
NEGISTRATION NUMBER: 36,749
                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                             SOFTWARE: FastSEQ for Windows Version 2.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: COILEY, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          IMMEDIATE SOURCE:
LIBRARY: GenBa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TOPOLOGY: line
                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 31/7
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                           STRANDEDNESS:
                                           TYPE: amino acid
                                                                                                                                                                                                                                               FILING DATE:
                                                                                                                                                                                                                                                                APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                            COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U
ZIP: 94304
                                                                                                                                               REFERENCE/DOCKET NUMBER:
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1683637
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                                                     168 amino acids
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            linear
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Pred. No. 3.8e-10;
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US-09-410-372-7
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                                                                              Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                              TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/410,372
FILING DATE:
PRIOR APPLICATION NUMBER: 08/985,335
APPLICATION NUMBER: 08/985,335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                    IMMEDIATE SOURCE:
LIBRARY: GenBa
                                                                                                                                                                                                                                                                                                    NAME: BILLINGS, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: COrley, Neil C.
TITLE OF INVENTION: PROLIFERATION
TITLE OF INVENTION: PROLIFERATION
UMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       103 NLWAAQRYGRELRRMSDEFVDSFK 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
STATE: CA
                                                              Local Similarity
les 22; Conserv
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ZIP: 94304
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les 22; Conservative
                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                               TYPE: amino acid
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1683637
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3174 Porter Dr.
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ilarity 91.7%;
Conservative
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91.7%;
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                                                                           Score 114;
Pred. No.
                                                                                             DB 4;
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                                                                                          Length 168;
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RESULT 14

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; TOPOLOGY: 1:
; MOLECULE TYPE:
US-08-333-565-10
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Best Local Similarity
Whiches 21; Conservi
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GENERAL INFORMATION:
APPLICANT: KORSME
                                                                                                                                                                                                                                                                                                                                            Sequence 10, Appli Patent No. 5834209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: (415) 326-2400
TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 10
                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: SMITH, WILLIAM M
REGISTRATION UNMBER: 30, 223
REFERENCE/DOCKET NUMBER: 15;
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 23 amino acids
TYPE: amino acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PATEN: PC-DOS/MS-DOS
SOFTMARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-OCT-1994
CLASSIFICATION: 435
CURRENT APPLICATION: 435
                                                                                                                                                                                                                                                  TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
               SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                    COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS
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                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                            STREET: 379 Lyt:
CITY: Palo Alto
STATE: Californ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Palo Alto
STATE: California
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APPLICATION NUMBER:
                                                                                                                                         COUNTRY: US
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                                                                                                                                                              California
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                                                                                                                                                                                                                                                                                                                                                             Application US/08661479
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                                                                                                                                                                                             379 Lytton Avenue
                                                                                                                                                                                                                                                                                      KORSMEYER, Stanley J.
VENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KORSMEYER, Stanley J.
VENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
VENTION: REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                  Townsend and Townsend Khourie and Crew
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100.0%; Pr
0;
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59
US/08/661,479
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Pred. No. 6.1e-1;
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Maximum DB
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Perfect score:
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                                                         Database
                                                                                                               Post-processing:
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                                                                                                                                         seq
                                                                                                                                                                                                                                                                                                                                                                                                         protein search, using sw model
                                                                                                                                           length: 2000000000
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PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
                                                                                                               Minimum Match 0%
                                                                                                                                                                                                                                                                                                                                                September 20, 2002, 10:39:12; Search time 95.59 Seconds (without alignments) 28.146 Million cell updates/sec
                                                                                                                                                                                                                                              BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                      US-09-544-664-55
148
                                                                                  Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                   283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
pir1:*
pir2:*
pir3:*
pir4:*
                                                                                                                                                                                                                                                                                      KNLWAAQRYGRELRRMSDEFEGSFKGLK 28
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length D	BB	ID	Description
H	138	93.2	204	2	A55671	protein - mou
2	54		946	N	JC5575	inter-alpha-trypsi
ω	53	35.8	223	ν	D70760	hypothetical prote
4	53		946	N	S54354	٠-
ហ	52		370	Ν	S38185	2-dehydro-3-deoxyp
6	51	34.5	232	2	A42095	floral homeotic pr
7	50		374	N	C84338	
æ	50		516	N	A96753	probable threonine
9	50		1378	N	A81393	DNA-directed RNA p
10	49.5		127	N	AI1210	glycerol-3-phospha
11	49		453	Ν	E83517	conserved hypothet
12	48.5		134	N	S40376	Ig kappa chain -
13	48.5		314	2	T02975	annexin P35 - maiz
14	48		206	Ν	C36365	transforming prote
15	48	32.4	220	Ν	F72289	oxidoreductase, so
16	48		526	N	T08545	threonine synthase
17	48		1164	Ν	T24806	hypothetical prote
18	47.5		334	N	A39172	O.
19	47.5		1140	Ŋ	T09486	hypothetical~prote
20	47	31.8	287	N	S43852	neuropeptide Pol-
21	47		597	N	G82308	oxaloacetațe decar
22	47		967	N	F82668	oxoglutarate dehyd
23	47		5138	Ν	в96695	hypothetical prote
24	46.5		314	ν	T02961	annexin P33 - maiz
25	46.5		435	N	A44308	Antho-RFamide prec
26	46		165	ν	S59899	chlorocruorin chai
27	46	31.1	399	2	T35440	probable polyamine
28	46	31.1	946	-	,	inter-alpha-tryps
29	45	,			ZUHYI	conserved hunothet

## ALIGNMENTS

C;Species: Mus musculus (house mouse)
C;Date: 03-Mar-1995 #text\_change 05-Nov-1999
C;Accession: A55671
R;Yang, E.; Zha, J.; Jockel, J.; Boise, L.H.; Thompson, C.B.; Korsmeyer, S.J.
Cell 80, 285-291, 1995
A;Title: Bad, a heterodimeric partner for Bcl-x-L and Bcl-2, displaces Bax and promot A;Reference number: A55671; MUID:95136361
A;Accession: A55671 δõ A;Molecule type: mRNA A;Restidues: 1-204 </NA) A;Cross-references: GB:L37296; NID:g639778; PIDN:AAA64465.1; PID:g639779 C;Keywords: heterodimer A; Status: preliminary; not compared with conceptual translation bad protein Query Match
Best Local Similarity
Matches 26; Conserv 140 NLWAAQRYGRELRRMSDEFEGSFKGL 165 2 NLWAAQRYGRELRRMSDEFEGSFKGL 27 - mouse Conservative 93.2%; 0; Score 138; I Pred. No. 1. Mismatches DB DB 2; .2e-12; 0; Length 204; Indels 0; Gaps 0,

R;Nakatani, T.; Suzuki, Y.; Yamamoto, T.; Sinohara, H.
J. Biochem. 122, 71-82, 1997
A;Title: Molecular cloning and sequencing of cDNAs encoding three heavy-chain sin inhibitor heavy chain family.
A;Reference number: JC5574; MUID:97420688
A;Accession: JC5575 inter-alpha-trypsin inhibitor heavy chain 2 - golden hamster
c;Species: Mesocricetus auratus (golden hamster)
C;Date: 33-Sep-1997 #sequence\_revision 23-Sep-1997 #text\_change 20-Jun-2000
C;Accession: JC5575; PC4485 Yamamoto, T.;

precurs

A;Molecule type: mRNA A;Residues: 1-946 <NAK> A;CCOSS-references: DDBJ.D89286; NID:g1694689; PIDN:BAA13939.1; PID:g1694690 A;Experimental source: liver

A; Accession: PC4485

A;Molecule type: protein
A;Residues: 55-64;140-146;151-156;424-447;500-528;577-605 <NA2>
C;Comment: In the plasma three inter-alpha-trypsin inhibitor heavy chains 1, that the complexes play important role for panceatic cancer.
C;Superfamily: inter-alpha-trypsin inhibitor complex component II
F;261-264,717-916/Disulfide bonds: #status predicted

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RESULT
S38185
N; Alternate names: 3-deo: C; Species: Saccharomyces
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A:Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, A:Title: Deciphering the biology of Mycobacterium tuberculosis from the coal, Reference number: A70500; MUID:98295987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: D70760
C;Accession: D70760
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D; Connor, R.; Davles, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Connor, R.; Davles, R.; Devlin, K.; Seeger, K.; Skelton, S.; Squares,
        2-dehydro-3-deoxyphosphoheptonate aldolase (EC 4.1.2.15) ARO4 - N;Alternate names: 3-deoxy-D-arabino-heptulosonate-7-phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: GB:Z74025; GB:AL123456; NID:g3261586; A;Experimental source: strain H37Rv C:Genetics:
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A; Residues: 1-223 <COL>
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Best Local Similarity 58.8
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9: Conser
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Pred. No. 11;
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        synthase;
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Gene 113, 67-74, 1992
A;Title: Cloning, primary structure and regulation of the A;Title: Cloning, primary structure and regulation of the A;Reference number: JN0322; MUID:92225349
A;Accession: JN0322
A;Accession: JN0322
A;Molecule type: DNA
A;Residues: 1-204, 208-370 <KUE>
A;Cross-references: EMBL:X61107
R;Kuenzler, M.; Balmelli, T.; Egli, C.M.; Paravicini, G.;
J. Bacteriol. 175, 5548-5558, 1993
J. Bacteriol. 175, 5548-5558, 1993
floral homeotic protein APETALA3 (AP3) - Arabidopsis thaliana N;Alternate names: homeotic protein APETALA3; MADS-box regulatory protein AP3 C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000 C;Accession: A42095; S52633; T47593 R;Jack, T.; Brockman, L.L.; Meyerowitz, E.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Description: aldehyde-lyase; carbon-carbon lyase
A; Pathway: aromatic amino acid biosynthesis; shikimate pathway
A; Note: first step in shikimate pathway
C; Superfamily: phospho-2-dehydro-3-deoxyheptonate aldolase
C; Keywords: aldehyde-lyase; aromatic amino acid biosynthesis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-370 < ALJ>
A; Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
A; Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
R; Aigle, M.; Baclet, M.C.; Barthe, C.; Biteau, N.; Crouzet, M.; Doignon, F.
R; Aigle, M.; Baclet, M.C.; Barthe, C.; Biteau, N.; Crouzet, M.; Doignon, F.
R; Aigle, M.; Baclet, M.C.; Barthe, C.; Biteau, N.; Crouzet, M.; Doignon, F.
R; A; Reference number: S45940
A; Reference number: S45940
A; Reference number: S46130
A; Recssion: S46130
A; Recssion: S46130
A; Residues: 1-370 < AIG>
A; Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
A; Residues: 1-370 < AIG>
A; Recssion: S46130
A; Residues: 1-370 < AIG>
A; Resi
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A;Cross-references:
A;Map position: 2R
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A: Residues: 352-370 < KU2>
A: Cross-references: GB: X61107
C: Comment: This enzyme cataly:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Status: preliminary
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A; Residues: 1-370 < DOI>
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A;Cross-references: GB:MB6357; NID:g166607; PIDN:AAA32740.1; PID:g166608 A;Experimental source: petals, stamens A;Experimental source: petals, with the sequence extracted from NGBI backbone (NCBIN:82520, NCBIP:82521) R;Okamoto, H; Yano, A.; Shiraishi, H.; Okada, K.; Shimura, Y. Plant Mol. Biol. 26, 465-472, 1994
A;Title: Genetic complementation of a floral homeotic mutation, apetala3. A;Reference number: $52633; MUID:95036018
A;Accession: $52633
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A; Residues: 1-232 <BLO>
A; Cross-references: EMBL: ALI 32971
A; Experimental source: cultivar Columbia; BAC clone T12E18
C; Genetics:
A; Map position: 3
A; Introns: 53/2; 85/3; 106/2; 139/3; 153/3; 168/3
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A;Residues: 1-63 <ORA)
A;Coss-references: GB:DZ1125
A;Cross-references: GB:DZ1125
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes,
R;Bloecker, H.; Mewes, H.; Mewes, H.; Mewes, H.; Mayer, M.; Mayer, M.; Mayer, M.; Mewes, M.; Mayer, M.; M.; Mayer, M.; Mayer, M.; M.; Mayer, M.; M.; M.; M.; M.; M.; M.; M
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A;Accession: A42095
                                                                                                                                                                                                                                                                                   A;Cross-references:
C;Genetics:
A;Gene: potA2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ring, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G. Jung, K.H.; Alam, M.; Freitas, T. Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000 A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, A;Title: Genome sequence of Halobacterium A;Reference number: A84160; MUID:20504483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Note: T12E18 30
C;Superfamily: transcription factor squa; serum response factor DNA-binding C;Keywords: DNA binding; nucleus; transcription regulation C;Keywords: DNA binding; nucleus; transcription domain homology <SRF>
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A; Accession: T47593
A; Status: preliminary
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A; Residues: 1-374 <STO>
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C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
C;Accession: C84338 c p. Mahairas. G.G.: Berguist, B.; Pan, M.; Shukla, H
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           spermidine/putrescine ABC transporter [imported] - Halobacterium sp. NRC-1, C; Species: Halobacterium sp. NRC-1
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A; Residues: 1-232 < JAC>
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10; Conser
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12; Conservative
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; Pred. No. 7.3;
3; Mismatches
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C;Genetics:
A;Gene: F3N23.1
A;Map position:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA-directed RNA polymerase (EC 2.7.7.6) beta chain Cj0478 [imported] - Campylobacter C;Species: Campylobacter Jejuni C;Species: Campylobacter Jejuni C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 08-Sep-2000 C;Accession: A81393
R;Parkbill, J.; Wren, B.W.; Mungall, K.; Ketley, J.M.; Churcher, C.; Basham, D.; Chil C.W.; Quali, M.; Rajandream, M.A.; Rutherford, K.M.; VanVliet, A.; Whitehead, S.; Ba Nature 403, 665-668, 2000
A;Title: The genome sequence of the food-borne pathogen Campylobacter jejuni reveals A;Reference number: A81393
A;Accession: A81393
A;Accession: A81393
A;Accession: A81393
                                                                                                                                                                                                                                                  C;Genetics:
A;Gene: rpoB; Cj0478
C;Superfamily: DNA-directed RNA polymerase
C;Keywords: nucleotidyltransferase
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A; Residues: 1-1378 <PAR>
A; Cross-references: GB:AL139075;
A; Experimental source: serotype (
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A;Molecule type: DNA
A;Residues: 1-516 <STO>
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A; Accession: A96753
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                                                                                                           13; Conservative
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12; Conser
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; Pred. No. 23;
7; Mismatches
                                                                                                        ; Score 50; DB
; Pred. No. 63;
3; Mismatches
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R;Klein, R.; Jaenichen, R.; Zachau, H.G.
Eur. J. Immunol. 23, 3248-3271, 1993
A:Title: Expressed human timmunoglobulin chi
A:Reference number: $40312; MUID:94080891
A:Accession: $40376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Molecule type: DNA
A;Residues: 1-453 <STO>
A;Cross-references: GB:AE004535; GB:AE004091; NID:g9946936; PIDN:AAG04420.1; GSPDB:GN001
A;Experimental source: strain PAO1
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Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; F.
D.; Jones, L.M.; Karst, U.
Science 294, 849-852, 2001
A;Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam ok, C.; Schlueter, T.; Simoes, N.; Tlerrez, A.; Vazquez-Boland, J.A.; Voss, H.;
A;Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
A;Accession: A11210
A;Schaus: preliminary
A;Molecule type: DNA
A;Residues: 1-127 cGLA>
A;Ressidues: 1-127 cGLA>
A;Ressidues: 1-127 cGLA>
A;Ressidues: 1-127 cGLA>
A;Cross-references: GB:NC_003210; PIDN:CAC99167.1; PID:g16410491; GSPDB:GN00177
A;Experimental source: strain EGD-e
                                                                                                              Ig kappa chain - human
C;Species: Homo Sapiens (man)
C:Date: 06-Mar-1994 #sequence_revision 26-May-1995
C:Accession: $40376
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R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, Lory, S.; Olson, M.V.
Nature 406, 959-964, 2000
A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an A;Reference number: A82950; MUID:20437337
A;Accession: E83517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            conserved hypothetical protein PA1031 [imported] - Pseudomonas aeruginosa (strain C;Species: Pseudomonas aeruginosa C;Date: 15-Sep-2000 *sequence_revision 15-Sep-2000 *text_change 31-Dec-2000
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                                                                                                                                                                                                       S40376
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Best Local Similarity
Matches 10; Conserv
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Best Local Similarity 36.4%;
Matches 12; Conservative
                                                                                                                                                                                                                            12
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                                                                                                                                                                                                                                                                                         4 WAAQRYGR--ELRRMSDE 19
||::| || ||!!::|
65 WASERQGREEELRRLASE 82
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                                                                                                                                                                                                                                                                                                                                                                                                 Score 49; DB
Pred. No. 28;
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A.; Larbig,
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Voss, H.; Wehland
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    Query Match
Best Local
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Similarity

32.4%;

Score Pred.

48; DB No. 18;

2

Length

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annexin p35 - maize

C; Species: Zea mays (maize)
C; Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 21-:
C; Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 21-:
C; Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 21-:
C; Date: 24-Mar-1995 #Sequence_revision 24-Mar-1999 #text_change 21-:
C; Date: 24-Mar-1995 #Sequence_revision of maize annexins P33 and P10-1995 #T00-1995 #
A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-206 <CASS
A;Cross-references: GB:M55177
A;Cross-references: GB:M55177
C;Superfamily: ras transforming protein; translation elongation factor Tu homology
C;Reywords: GTP binding; nucleotide binding; P-loop
F;I1-126/Domain: translation elongation factor Tu homology <ETU>
F;17-24/Region: nucleotide-binding motif A (P-loop)
F;113-126/Region: GTP-binding SAK/L motif
F;133-126/Region: GTP-binding SAK/L motif
F;23,24,42,123,124,126,183/Binding site: Mg-GTP (Lys, Ser, Thr, Asn, Lys, Asp, Ser)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              transforming protein homolog MRAS3 - Rhizomucor racemosus C;Species: Rhizomucor racemosus C;Species: Rhizomucor racemosus C;Date: 28-Mar-1991 *sequence_revision 28-Mar-1991 *text_change 19-Jan-2001 C;Accession: C36365 R;Casale, W.L.; McConnell, D.G.; Wang, S.Y.; Lee, Y.J.; Linz, J.E. Mol. Cell. Biol. 10, 5654-5663, 1990 Mol. Cell. Biol. 10, 5
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A:Molecule type: mRNA
A;Resiaus: 1-134 <KLEP
A;Resiaus: 1-244 <KLEP
A;Cross-references: EMBL:X72486; NID:9441440; PIDN:CAA51154.1; PID:9441441
C:Superfamily: immunoglobulin V region; immunoglobulin homology
C:Keywords: heterotetramer; immunoglobulin
C:Keywords: heterotetramer; immunoglobulin
F;34-113/Domain: immunoglobulin homology <IMM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mol. Cell. Biol. 10, 6654-6663, 1990 A:Title: Expression of a gene family in the dimorphic fungus Mucor racemosus which A:Reference number, A36365; MUID:91061774 A:Accession: C36365
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4; Mismatches
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Nature 399, 323-329, 1999
A.71tle: Evidence for lateral gene transfer between Archaea and Bacteria from genome seq A.74 (Reference number: A72200; MUID:99287316
A.74 (Reference number: A72200; MUID:99287316
A.75 (Reference F7228)
A.76 (Reference F7228)
A.77 (Residues: 1-220 < CARN)
A.77 (Residues: 1-220 <
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F72289
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C;Species: Thermotoga maritima
C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 21-Jul-2000
C;Accession: F72289
R;Nelson, K.E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft, D.H.; Hickey Garrett, M.M.; Stewart, A.M.; Cotton, M.D.; Pratt, M.S.; Phillips, C.A.; Richardson, D.; C.M.
Search completed: September 20, 2002, 10:39:13 Job time: 485 sec
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THRC_SOLTU
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FMRA_CALPA
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PRFA_POLPE
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UVRA_STRCO
PSBO_ANASP
SNP4_KLULA
DCOA_SALTY
DCOA_KLEPN
DCOA_KLEPN
HT2A_HUMAN
ENV_SIVAT
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o35147 rattus norv
o92934 homo sapien
p97279 mesocricetu
o61703 mus musculu
p32449 saccharzomyc
p35632 arabidopsis
o46124 campylobact
O91403 pseudomonas
p22280 rhizomucor
95x0n8 thermotoga
O9mt28 solanum tub
O9s755 arabidopsis
o11133 calliactis
o45521 homo sapien
p21259 polyorchis
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p116994 anthopleura
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p13908 salmonella
o13049 homo sapien
p05886 simian immu
o18823 caenorhabdi
p33900 salmonella
o54918 mus musculu
o84949 grattus norv
p50465 gscherichia
o33925 thermotoga
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phosphorylation at Ser-155, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival.
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raction then facil	1. PTM: Phosphorylated on Ser-112 in response to survival subsequent phosphorylation on Ser-136 promotes heterodime	ivity and for thei the Bcl-2 family.	cytoplasm. quired by BIK, BID	ted form binds 14- ochondrial membran	h the anti-apoptot	n growth factor re	<pre>proteins with BAXx(L), but not tha</pre>	Bcl-w, thereby aff	Successfully compo	es cooperate to in	s A., Fesik S.W.,			n or BAD	ge C., Herrera R.,	ER-112 AND SER-1		T-VE died BCT Z'	H., Thompson C.B			athi; Muridae;	. Vertehrata: F		1-2 binding	e update)	204 AA.	•	ALIGNMENTS								
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16-OCT-2001 (Rel. 40, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update
Bcl2-antagonist of cell death (BAD) (Bcl-2 b)
6) (Bcl-xL/Bcl-2 associated death promoter).
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D'Agata V., Magro
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ser-136 is the major site of AKT/PKB phosphorylation, major site of protein kinase A (CAPK) phosphorylation. SIMILARITY: CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 (BH3). SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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                                                                                                                                                                      S.Y., Keipia A., Zhu L., Haueh A.J.w.; srference of BAD (Bcl-xL/Bcl-2-associated death tosis in mammalian cells by 14-3-3 isoforms and Endocrinol. 11:1858-1867(1997).
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2001 (Rel. 40, C
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; IPR000712; Bcl_2
PS01259; BH3; FAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/an email to license@isb-sib.ch).
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                                                                 243:137-140(1998).
 PubMed=11161472;
U., Yu L.-Y., St
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G., Travali S.,
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DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bcl-2 family.

PM: Phosphorylated on Ser-113 in response to survival stimuli. Subsequent phosphorylation on Ser-137 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-156, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival. Ser-137 is the major site of AKT/PKB phosphorylation, Ser-156 the major site of protein kinase A (CAPK) phosphorylation (By Similarity).

SIMILARITY: CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 (BH3).
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their interaction with Bc1-w in symp
Mol. Cell. Neurosci. 17:97-106(2001)
-1- FUNCTION: Promotes cell death. S
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DOMAIN
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PROSITE; PS01259; BH3; F
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways. SUBUNIT: Forms heterodimers with the anti-apoptotic proteins. SUBUNIT: Forms heterodimers with the anti-apoptotic proteins. Bcl x(L), Bcl-2 and Bcl-w, Also binds protein S100A10. The Ser-117/Ser-137 phosphorylated form binds 14-3-3 proteins. SUBCELULIAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm (By similarity). ALTERNATIVE PRODUCTS: 2 isoforms; alpha (shown here) and beta; arproduced by alternative splicing. They differ only in their C-terminal regions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE SPECIFICITY: Expressed in all tissues tested, including brain, liver, spleen and heart. In the brain, restricted to epithelial cells of the choroid plexus. Isoform alpha is the m
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AF279910;
AF279911;
                                                                                                                                                                                                                                                                                                                                                                                     AF003523;
29
205
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SIMILARITY).
PHOSPHORYLATION
SIMILARITY).
PHOSPHORYLATION
SIMILARITY).
                                                                                                                                                                                                                                                                                   Alternative splicing
   EVAMEPLRYWTALRRIC (IN ISOFORM BETA).
5->A: NO EFFECT ON HETERODIMERIZATION
WITH 14-3-3 PROTEINS.
5->A: NO HETERODIMERIZATION WITH 14-3-3
BROTEINS. NO EFFECT ON HETERODIMERIZATION
WITH BCL2 NOR WITH PROTEIN P11.
SDAGGR -> ERRGRK (IN REF. 1).
7AFA71DAE9CF4A81 CRC64;
                                                                                                                                      LPRPKSAGTATQMRQSASWTRIIQSWWDRNLGKGGSTPSQ
-> EELTYSVEFLPVRAIAMEGWPLLWSFQSFPHTLPPTPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                two splice variants sympathetic neurons
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                                                                                                                                                                                     (BY CAPK AND PKB)
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Query Match Best Local & Matches 26

ch 93.2%; Similarity 100.0%; 26; Conservative

Score 138; DB; Pred. No. 1.7.

DB 1; L., 1.7e-13; 0;

Length 205

Indels

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01-NOV-1997 (Rel. 35, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Bcl2-antagonist of cell death (BAD) (Bcl-2 binding
6) (Bcl-XL/Bcl-2 associated death promoter).
BAD OR BBC6 OR BCL2L8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A., AND PHOSPHORY MEDILINE-97083574; PubMed-8929532; Wang H.-G., Rapp U.R., Reed J.C.; "Bcl-2 targets the protein kinase cell 87:629-638(1996).
                                                                                                                                                                                                                 Fesik S.W.;

"Rationale for Bcl-xL/Bad peptide complex formation mutagenesis, and biophysical studies.";

Protein Sci. 9:2528-2534(2000).

Promotes cell death. Successfully complete function.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BAD.
                                                                                                                                                                                                                                                                                        MEDLINE=21073561; PubMed=11206074; Petros A.M., Nettesheim D.G., Wang Mack J., Swift K., Matayoshi E.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                    Ottilie S., Diaz J.-L., Horne W., Chang J., Chang S., Weeks S., Fritz L.C., Oltersdorf "Dimerization properties of human BAD."; J. Biol. Chem. 272:30866-30872(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A. Yin D.X., Li Z., F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae
binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By similarity), Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

1. Subunt: Forms heterodimers with the anti-apoptotic proteins, Bcl-x(L), Bcl-2 and Bcl-w. Also binds protein Sl00Al0 (By similarity). The Ser-75/Ser-99 phosphorylated form binds 14-3-3 proteins (By similarity).

2. Subcellular Location. Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm.

1. TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES.

1. DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bcl-2 family.
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STRUCTURE BY NMR OF 103-127
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                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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MEDLINE-98049554; P
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with Bcl-2
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Zhang
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ng H., Thompson
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Matches 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
MEDLINE-97420688; PubMed=9276673;
Nakatani T., Suzuki Y., Yamamoto T., Sinohara H.;
Nakatani T., Suzuki Y., Yamamoto T., Sinohara H.;
Mclecular cloning and sequencing of cDNAs encoding three precursors of the inter-alpha-trypsin inhibitor in Syrian implications for the evolution of the inter-alpha-trypsin heavy chain family.";
                                                                                                                                               Mesocricetus auratu
Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                              2 NIWAAORYGRELRRMSDEFEGSFK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PTM: Phosphorylated on Ser-75 in response to survival stimuli. Subsequent phosphorylation on Ser-99 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-118, a sitt within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival. Ser-99 is the major site of AKT/PKB phosphorylation, Ser-118 the major site of protein kinase A (CAPK) phosphorylation (by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: CONTAINS 1 BCL-3 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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Chordata; Craniata; Vertebrata;
Rodentia; Sciurognathi; Muridae;
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"Inter-alpha-trypsin inhibitor and its related proteins in Syrian hamster usine and plasma";
J. Blochem. 120:145-152(1996).
-!- FUNCTION: MAY ACT AS A CARRIER OF HYALURONAN IN SERUM OR AS A BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DECRAPATION OF HYALURONAN WHICH ARE
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Pfam; PF00092; vwb; 1.
SMART; SM00327; VWA; 1.
PROSITE; PS50234; VWFA; 1.
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SIGNAL
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SIMILARITY: BELONGS TO THE ITIH FAMILY.
SIMILARITY: CONTAINS 1 VWFA DOMAIN.
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                                                                                                                                                                                                                                                                   NLWAAQRYGRELRRMSDEFEGSFKGL 27
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   36, Created)
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BY SIMILARITY
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CROSS-LINK SI
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MEDLINE-95194326; PubMed-7534067;
Chan P., Risler J.-L., Raguenez G., Salier J.-P.;
The three heavy-chain precursors for the inter-alpha-inhibitor family in mouse: new members of the multicopper oxidase protein with differential transcription in liver and brain.";
Biochem. J. 306:505-512(1995).
-I- FUNCTION: MAY ACT AS A CARRIER OF HYALDRONAN IN SERUM OR AS
                                                                                                                       SEQUENCE
                                                                                                                                                                      BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002035; v
Pfam; PF00092; vwa; 1.
SMART; SM00327; VWA; 1
PR0SITE; PS50234; VWFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                            Glycoprotein.
SIGNAL
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15-JUL-1999 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Serine protease
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: I ALPHA-I PLASMA PROTEASE INHIBITORS ARE ASSEMBLED FROM ONE OR TWO HEAVY CHAINS (H1, H2 OR H3) AND ONE LIGHT CHAIN.

BIKUNIN. INTER-ALPHA-INHIBITOR (I-ALPHA-I) IS COMPOSED OF H1, H3 AND BIKUNIN, INTER-ALPHA-LIKE INHIBITOR (I-ALPHA-LI) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-I) OF H3 AND BIKUNIN.

TISSUE SPECIFICITY: EXPRESSED IN BOTH LIVER AND BRAIN.

PTM: HEAVY CHAINS ARE INTERLINKED WITH BIKUNIN VIA A CHONDROITIN A-SULENTE BRIDGE TO THE THEIR C-TERMINAL ASPARTATE (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH ESSENTIAL TO CELLS UNDERGOING BIOLOGICAL PROCESSES (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY).
SIMILARITY: BELONGS TO THE ITIH FAMILY.
SIMILARITY: CONTAINS 1 VWFA DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY).
Similarity 34.0
9; Conservative
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Metazoa; Chordata; C
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                                                                                                                                                                                                                                                                                                                                                                                                                                      i; VWFA; 1. inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   VWFA;
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8, Last annotation updat
inhibitor heavy chain H
                                                                                                                          105927
                       35.8%;
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                                                                                                                VWFA.

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

N-LINKED (GLCNAC. . .) (POTENTIAL).

CHONDROITIN 4-SULFATE, CROSS-LINK SIT!

(BY SIMILARITY)

MW; 40DB6716433ED9DC CRC64;
                                                                                                                       MW,
                                                                                                                                                                                                                                                                                                                                                                                                                                      Repeat;
5,
                       Score 53;
Pred. No.
                                                                                                                                                                                                                                                                                         H2.
BY SIMILARITY
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                                                                                                                                                                                                                                                                                                                                        INTER-ALPHA-TRYPSIN
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal; Multigene family;
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                                              Length 946
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PIR; S381b0; WILLIAM STATE PIR; S981b0; PO0886; 1QR7.
SGD; S0000453; ARO4.
InterPro; IPR001785; DAHP_synth_1; 1.
Pfam; PF00793; DAHP_synth_1; 1.
ProDom; PD005060; DAHP_synth_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.

MEDLINE-92225349; PubMed-1348717;

MEDLINE-92225349; PubMed-1348717;

Kuenzler M., Parzwicini G., Egil C., Irniger S., Braus G.H.;

"Cloning, primary structure and regulation of the ARO4 gene, encoding the tyrosine-inhibited 3-deoxy-D-arabino-heptulosonate-7-phosphate synthase from Saccharomyces cerevisiae.";

Gene 113:67-74(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-FEB-1994 (Rel. 28, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Phospho-2-dehydro-3-deoxyheptonate aldolase, tyrosine-inhibited
(EC 4.1.2.15) (Phospho-2-keto-3-deoxyheptonate aldolase) (DAHP
synthetase) (3-deoxy-D-arabino-heptulosonate 7-phosphate synthase)
ARO4 OR YBR249C OR YBR1701.
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P32449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YEAST
                                                                                                                                                                                                                                                                                                                                                                     Doignon F., Biteau N., Aigle M., Crouzet M.; "The complete sequence of a 6794 bp segment located on the of chromosome II of Saccharomyces cerevisiae. Finding of a dUTPase in a yeast."; Yeast 9:1131-1137(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Saccharomyces cerevisiae (Baker's yeast).

Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-OCT-1993 (Rel.
01-FEB-1994 (Rel.
30-MAY-2000 (Rel.
                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Ew the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted (NOV-1993) to
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                                                                                            EMBL; X61107; CAA43419.1; -.
EMBL; L20296; AAA65607.1; -.
EMBL; Z36118; CAA85212.1; -.
EMBL; S38185; S38185.
                                                                                                                                                                    entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                   modified and this statement is not removed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
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phosphate + H(2)O.
ENZYME REGULATION: INHIBITED BY TYROSINE.
PATHWAY: FIRST STEP IN THE BIOSYNTHESIS OF CHORISMATE
THE BIOSYNTHESIS OF AROMATIC AMINO ACIDS (THE SHIKIMAT
INDUCTION: BY AMINO ACID STARVATION.
SIMILARITY: BELONGS TO CLASS-I DAHP SYNTHETASE FAMILY.
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synthase).
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MBL outstation -
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MEDLINE-21016720; PubMed=11130713;

X Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,

X Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,

X Salanoubat M., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,

X Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,

X Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,

X Mincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,

X Mincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,

X Mincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,

X Wincker P., Cattolico L., Weissenbach J., Senes V.,

X Wincker P., Cattolico L., Weissenbach J., Senes V.,

X Wincker P., Cattolico L., Weissenbach J., Schaef R., Longelo M., Pallavicini A., Toppo S., Simionati B.,

X Wincker P., Collado C., Rouser G., Loehnert T.-H., Nordsiek G.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

X Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,

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AP3632; 039003;
01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
116-OCT-2001 (Rel. 40, Last annotation update)
116-OCT-2001 (Rel. 40, Last sequence update)
116-OCT-2001 (Rel. 29, Created)
116-OCT-2001 (Rel. 29, Last sequence update)
116-OCT-2001 (Rel. 29, Created)
116-OCT-2001 (Rel. 29, Last sequence update)
116-OCT-2001 (Rel. 29, Created)
116-OCT-2001 (Rel. 29, Last sequence update)
116-OCT-2001 (R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Genetic complementation of a floral homeotic mutation, apetala3, with an Arabidopsis thaliana gene homologous to DEFICIENS of Antirrhinum majus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Purugganan M.D., Suddith J.I.;
"Molecular population genetics of floral homeotic loci. Departures from the equilibrium-neutral model at the APETALA3 and PISTILLATA genes of Arabidopsis thallana.";
Genetics 151:839-848(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-CV. LANDSBERG ERECTA;
MEDLINE-95036018; PubMed-7948893;
Okamoto H., Yano A., Shiraishi H.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-VARIOUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A
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InterPro: IPR002487; K-box.
InterPro: JPR002100; MADS-box.
InterPro: JPR002100; MADS-box.
PfBm; PF01486; K-box: 1.
PfBm; PF001496; SRF-TF; 1.
PFBNTS: PR004041; MADSDOMAIN.
SMART; SM00432; MADS: 1.
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RPOB_CAMJE
Q46124; Q9PI31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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-1- TISSUE SPECIFICITY: EXPRESSED IN PETALS AND STAMENS,
-1- MISCELLANEOUS: MUTATIONS IN AP3 CAUSE TRANSFORMATION
INTO SEPALS AND STAMINA INTO CARPELS.
-1- SIMILARITY: BELONGS TO THE MADS DOMAIN FAMILY OF TRAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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-i- SUBCELLULAR LOCATION: Nuclear.
-i- TISSUE SPECIFICITY: EXPRESSED IN PETALS AND ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS50066; MADS_BOX_2; 1.
Transcription regulation; DNA-binding; Activator; Nuclear protein;
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HSSP; P11746; 1MNM.
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-I- FUNCTION: TRANSCRIPTION FACTOR INVOLVED IN THE GENETIC CONTROL OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NIAMOG
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                                                                                                                                                                                                                                                                                                                      Local Similarity 44.4 es 12; Conservative
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3 57 MADS.
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19 AA: 27341 MW; 669070319F9857C3 CRC64;
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CONFLICT 558
CONFLICT 671
CONFLICT 691
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-i- FUNCTION: DNA-DEPENDENT RNA POLYMPAGE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-20150912; PubMed-10688204; Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Parkhill J., Wren B.W., Mungall K., Ketley J.M., Churcher C., Basham D., Chillingworth T., Davies R.M., Feltwell T., Holroyd S., Jagels K., Karlyshev A.V., Moule S., Pallen M.J., Penn C.W., Quail M.A., Rajandream M.A., Rutherford K.M., van Vliet A.H.M., Whitehead S., Barrell B.G.; Whitehead S., Barrell B.G.; Barrell B.G.; Repeated S., Barrell B., Barr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-NOV-1997 (Rel. 35, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
16-OCT-2001 (Rel. 40, Last annotation update)
DNA-directed RNA polymerase beta chain (EC 2.7.7.6) (Transcriptase beta chain) (RNA polymerase beta subunit).
RPOB OR CJ0478.
Campylobacter jojuni.
                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001572; RNA_pol_B.
Pfam; PF00552; RNA_pol_B; 1.
PROSITE; PS01166; RNA_POL_BETA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; AL139075; CAB75116.1; -. EMBL; X77304; CAA54509.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 338-1031 FROM N.A. MEDLINE-96084944; PubMed-7489896; Bustamante V.H., Puente J.L., San
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 403:665-668(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-NCTC 11168;
MEDLINE-20150912;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; epsilon subdivision; Campylobacter.
                                                                                                                                                                                                                                                                                                                                                                                                     Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBSTRATES.
-- -- CATALYTIC ACTIVITY: N nucleoside triphosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=197;
                                                 3 LWAAORYG--RELRRM----SDEFEGSFKGLK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (RNA)(N).
SUBUNIT: THE ENZYME CONSISTS OF THE SIGMA CHAIN AND THE CORE SUBUNIT: THE ENZYME CONSISTS OF THE SIGMA CHAIN AND THE CORE SUZYME WHICH IS COMPOSED OF 2 ALPHA CHAINS, 1 BETA CHAIN, AND THE CORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BETA' CHAIN.
SIMILARITY: BELONGS TO THE RNA POLYMERASE BETA CHAIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION OF DNA INTO RNA USING THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS
                                                                                                        13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                     Transcription; DNA-directed RNA polymerase;
                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                     347
558
671
691
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                                                                                                                                . 68
                                                                                                                                                                                                                                        NDLANGVDAA -> MTWLMALMOP (IN REF. A -> R (IN REF. 2). C -> S (IN REF. 2). A -> R (IN REF. 2). A -> R (IN REF. 2).
                                                                                                     Score 50; DB
Pred. No. 20;
3; Mismatches
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                                                                                                                                50;
                                                    28
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                                                                                                                                                          Length 1378
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RESULT 9
RMUC\_PSEAE

STANDARD,

PRT;

453 AA

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STEATH AND DESCRIPTION OF THE PROPERTY OF THE 
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Best I
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Q91403;
01-MAR-2002 (Rel.
01-MAR-2002 (Rel.
01-MAR-2002 (Rel.
                                                                                                                                                                                                                                                                                                                                         P22280;
01-AUG-1991
01-AUG-1991
30-MAY-2000
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STRAIR-ATCC 15692 / PAO1;

MEDILINE-20437337; PubMed=10984043;

MEDILINE-20437337; PubMed=10984043;

Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P.,

Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.,

Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.,

Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y.,

Garber R.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M.,

Smith K.A., Spencer D.H., Wong G.K.-S., Wu 2., Paulsen I.T.,

Reizer J., Saler M.H., Hancock R.E.M., Lory S., Olson M.V.;

"Complete genome sequence of Pseudomonas aeruginosa PAO1, an
  SEQUENCE FROM N.A.
STRALNA-ATCC 1216B:
STRALNE-S1061774; PubMed=1701021;
Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz
Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz
"Expression of a gene family in the dimorphic fungus Muco
which exhibits striking similarity to human ras genes.";
Mol. Cell. Biol. 10:6654-6663(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no we modified and this statement is not removed. Usage by and for commercia entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    opportunistic pathogen.";
Nature 406:959-964(2000).
-1- FUNCTION: Involved in DNA recombination (By similarity).
-1- SIMILARITY: BELONGS TO THE RAUC FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA recombination protein RMUC OR PA1031.
                                                                                                                                                                                                                                             Eukaryota;
                                                                                                                                                                                                                                                                  Rhizomucor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RHIRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AE004535; AAG04420.1; -.
                                                                                                                                                                                              NCBI_TaxID=4841;
                                                                                                                                                                                                                                                                                                                 Ras-like protein
                                                                                                                                                                                                                                                                                                                                                                                                                                      RAS3_RHIRA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           recombination;
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                                                                                                                                                                                                                                       racemosus
Fungi; Zyg
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(Rel.
(Rel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                         19, Created)19, Last sequence update)39, Last annotation update)
                                                                                                                                                                                                                                          sus (Mucor circinelloides
Zygomycota; Zygomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Coiled coil; Complete proteome.
201 COILED COIL (POTENTIAL).
51539 MW; 1E7EA97E82EC5E4B CRC64
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Pred. No. 8.3;
4; Mismatches
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8.3;
                                                                                                                                                                                                                                             f. lusitanicus)
Mucorales; Muco
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                                                                                                                                                                                                                                               Mucoraceae;
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E
                                                      racemosus
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RESULT 11
6PGL_THEMA
ID 6PGL_TO
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DT 30-MAI
DT 30-MAI
DT 16-CCD
DE 6-phoc
DE 6-ph
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                                   P SEQUENCE FROM N.A.

C STRAIN-MSBB / DSM 3109;

STRAIN-MSBB / DSM 3109;

X MEDILINE-99287316; PubMed-10360571;

X Melson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

A Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.

Stewart A.M., Cotton M.D., Pratt M.S., Philips C.A., Alchardson

A Heidelberg J. Sutton G.G., Fleischmann R.D., Eisen J.A., White

Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

"Evidence for lateral gene transfer between Archaea and Bacteria

"Evidence of Thermotoga maritima.";

"Evidence of Thermotoga maritima.";

Reture 399:323-339(1999).

L Nature 399:323-339(1999).

T. PHOSPHOGLUCONATE.

- PHOSPHOGLUCONATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9X0N8;
30-MAY-2000
30-MAY-2000
16-OCT-2001
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Pfan; FP00071; ras; 1.

SMART; SMO0173; RAS; 1.

SMART; SMO0173; RAS; 1.

SMART; SMO0173; RAS; 1.

SMP-BIND 16 23 GTP (BY SIMILARITY).

NP_BIND 63 67 GTP (BY SIMILARITY).

NP_BIND 122 125 GTP (BY SIMILARITY).

NP_BIND 122 125 GTP (BY SIMILARITY).

NP_BIND 122 125 GTP (BY SIMILARITY).

DOMAIN 38 46 EFFECTOR REGION (PROBABLE).

LIFID 202 202 FARNESYL (BY SIMILARITY).

SEQUENCE 205 AA; 23408 MM; DBF0864666790F50 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Thermotoga maritima.

Bacteria: Thermotogales:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M55177; AAA83379.1;
PIR; C36365; C36365.
HSSP; P01112; 1PLL.
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30-MAY-2000 (Rel. 39, Last seq
16-CCT-2001 (Rel. 40, Last ann
6-phosphogluconolactonase (EC
PGL OR DEVB OR TM1154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (S or send an email to license@isb-sib.ch).
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InterPro; IPR001806; Ras_trnsfrmng.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             168
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ween the Swiss Institute of Bioinformatics and the EMBL outsti
European Bioinformatics Institute. There are no restrictions
by non-profit institutions as long as its content is in
lifted and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEVELOPMENTAL STAGE: IN SPORULATING MYCELIUM AND GERMLING AND YEAST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENZYME REGULATION: ALTERNATE BETWEEN AN INACTIVE FORM BOUND TO AND AN ACTIVE FORM BOUND TO GTP. ACTIVATED BY A GUANINE NUCLEOTIDE-EXCHANGE FACTOR (GEF) AND INACTIVATED BY A GTPASE-ACTIVATING PROTEIN (GAP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: BELONGS TO THE SMALL GTPASE SUPERFAMILY. RAS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION:
                          phospho-D-gluconate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REIRRMNKEQEGRSKG
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  SECOND
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STEP
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  IN PENTOSE PHOSPHATE PATHWAY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              : sequence update)
: annotation update)
(EC 3.1.1.31) (6PGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 48; DB Pred. No. 4.9; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2
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                                                                                                                                                                                                                                                                                 Ison R.J.,
(etchum K.A.,
Garrett M.)
                                                                                                                                                                                                                                                            Richardson D.,
                                                                                                                                                                                     Bacteria
                                                     H(2)0
                                                                                                                                                                                                                                       White 0.,
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MBL outstation -
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Best Local S
Matches 8
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SOLTU
THRC_SOLTU STANDARD: PRT; 519 AA.
09MT28;
01-MAR-2002 (Rel. 41, Created)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last sequence (EC
                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
CASBAZZA P., Kaiser S., Willmitzer L., Hoefgen R., F
CASBAZZA P., Kaiser S., Willmitzer L., Hoefgen R., F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Threonine synthase, chloroplast precursor (EC 4.2.99.2) (TS). Solanum tuberosum (Potato).

Eukaryota, Viridiplantee; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids 1; Solanales; Solanaceae; Solanum.
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                                                                                         InterPro: IPR001926; B6_enzyme_beta.
Pfam: PF00291; PALP; I.
PROSITE; PS00165; DEHYDRATASE_SER_THR; 1.
Threonine biosynthesis; Lyase; Pyridoxal
                                                                                                                                                                                                                              EMBL: AF082894; AAF74984.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             <del>-</del> <del>-</del> <del>-</del> <del>-</del> <del>-</del>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                111
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  methionine (SAM) (By similarity).

PATHWAY: Threonine blosynthesis: last step.

SUBUNIT: Homodimer (By similarity).

SUBCELLULAR LOCATION: Chloroplast (By similarity).

SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  phosphate.

COPACTOR: Pyridoxal phosphate (By similarity).

ENZYME REGULATION: Allosterically activated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6-PHOSPHATE ISOMERASE FAMILY. 6-PHOSPHOGLUCONOLACTONASE SUBFAMILY.
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220 AA;
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25325 MW; 9B0FD07EE01E60C3 CRC64;
                                 peptide.
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CHLOROPLAST (BY SIMILARITY)
THREONINE SYNTHASE.
                                                                                            phosphate; Allosteric enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ٠.
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g threonine synthase
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RA Mayer K.E.X. Schweller C., Wambutt R., Murphy G., Volckaert G.,
RA Mayer K.E.X. Schweller C., Wambutt R., Murphy G., Volckaert G.,
RA Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Reichert B., Portetelle D., Perez-Alonso M., Boutry M., Bancroft I.,
RA Reichert B., Portetelle D., Perez-Rionso M., Boutry M., Bancroft I.,
RA Langham S.-A., McCullagh B., Silham I., Robben J.,
RA Langham S.-A., McCullagh B., Silham I., Robben J.,
RA Van der Schweren J., Grymonprez B., Chuang Y.-J., Vandenbussche F.,
RA Weitzenegger T., Bothe G., Ramsperger U., Hilbert H., Brawn M.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Dirkse M.,
RA Holzer E., Brandt A., Peters S., van Staveren M., Lamberth S., Van den Daele H.,
RA McOijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Weitzenegger A., Buysshaert C., Glelen J., Villarroel R., De Clercq R.,
RA Van Monragu M., Rogest J., Cronin A., Ouail M., Bray-Allen S.,
RA Clark L., Doggett J., Hall S., Kay M., Lennard N., McLay K., Mayes R.,
RA Petett A., Rajandream M.-A., Lyne M., Benes V., Rechmann S.,
RA Gabel C., Fuchs M., Fartmann B., Granderath K., Dauner D., Herzl A.,
RA Massenet O., Quigley F., Clabauld G., Muendlein A., Felber R.,
RA Gibbons T., Weber N., Berger C., Monfort A., Casacuberta E.,
RA Gibbons T., Weber N., Berger C., Monfort A., Casacuberta E.,
RA Gibbons T., Weber N., Bent E., Johnson S., Tacon D., Jesse T.,
RA Frishman D., Haase D., Lemcke K., Mewes H.-W., Stocker S.,
RA Frishman D., Bavan M., Wilson R.K., de la Bastide M., Habermann K.,
RA Latreille P., Couttney L., Cloud J., Abbott A., Scott K., Johnson D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ρy
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Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosideurosids II; Brassicales; Brassicaceae; Arabidopsis.

NCBI_TaxID-3702:
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SEQUENCE
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MEDLINE-99418329; PubMed-10490396;
Bartlem D., Tamaki Y., Naito S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-20083488;
Mayer K.F.X., Sch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bartlem D., Tamaki Y., Naito S.; "Genomic nucleotide sequence of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM
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12; Conser
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519 /
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57412
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PYRIDOXAL PHOSPHATE (BY SIMILARITY); 114C0979CD231464 CRC64;
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EMBL; AL050352; CAB43659.1; -.
EMBL; AL161575; CAB79742.1; -.
EMBL; L41666; AAR04607.1; -.
PDB; 1E5X; 02-AUG-01.
InterPro; IPR001926; PALP.
Pfam; PF00291; PALP; 1.
PROSITE; PS00165; DEHYDRATASE_SER_THR; 1.
Threonine biosynthesis; Lyase; Pyridoxal phosphate; Allosteric Chloroplast; Transit peptide; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institute. There are no rest modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb:or.send.an.email.to.license@fisb-sib.ch).
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Biochemistry 37:13212-13221(1998).
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"Crystal structure of threonine synthase from Arabidopsis thaliana.";
Protein Sci. 10:638-648(2001).
-!- CATALYTIC ACTIVITY: O-phospho-L-homoserine + H(2)O - L-threonine
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Characterization of an Arabidopsis thaliana cDNA encoding an
"Characterization of an Arabidopsis thaliana cDNA encoding an
"characterization of an Arabidopsis thaliana cDNA encoding an
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COFACTOR: Pyridoxal phosphate.
ENZYME REGULATION: Allosterically activated
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SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
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THERONINE SYNTHASE.
PYRIDOXAL PHOSPHATE.
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B27787A57B882AD0 CRC64;
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Pred. No. 14;
6; Mismatches
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RESULT 14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Antho-RFamide neuropeptides precursor.
Calliactis parasitica (Sea anemone).
Eukaryota; Metazoa; Cnidaria; Anthozoa; Zoantharia; Actiniaria;
Mynantheae; Hormathiidae; Calliactis.
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Pfam; PF01581; FARP;
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TISSUE SPECIFICITY: NEURONS ASSOCIATED WITH SMOOTH MUSCLE FIBERS
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RESULT 15
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Matches 11; Conservative
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16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Bcl2-1ike protein 11 (Bcl2 interacting mediator of cell death).
BCL2-1ice BIM.
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-!- FUNCTION: INDUCES APOPTOSIS. ISOFORM BIML IS MORE POTENT THAN
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                                                               InterPro; IPR000712; Bcl_2.
PROSTIE; PS01259; BH3; FALSE_NEG.
Apoptosis; Alternative splicing; Membrane.
DOMAIN 148 162 BH3.
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ALTERNATIVE PRODUCDETS: 2 ISOFORMS; BimEL (SHOWN HERE) AND BIML; ARE PRODUCED BY ALTERNATIVE SPLICING.

DOMAIN: THE BH3 DOMAIN IS REQUIRED FOR BCL-2 BINDING AND
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SUBUNIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2
PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BFL-1, AND BHRF-1. DOES
NOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BOK,
BAX OR BAK (BY SIMILARITY).
SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOTOXICITY.
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ON (G-238 PROVIDE AMIDE GROUP).

ON (G-247 PROVIDE AMIDE GROUP).

ON (G-257 PROVIDE AMIDE GROUP).

ON (G-267 PROVIDE AMIDE GROUP).

ON (G-267 PROVIDE AMIDE GROUP).

ON (G-2685 PROVIDE AMIDE GROUP).
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Search completed: September 20, 2002, 11:04:35 Job time: 1632 sec

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## ALIGNMENTS

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RESULT 1

O919N2

ID 0919N2

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AC 0919N2

DT 01-0EC-2000 (TrEMBLrel. 15, C.
DT 01-DEC-2001 (TrEMBLrel. 19, L.
DE BAD.
GN BAD.
GN BAD.
OC Enkaryota; Metazoa; Chordata;
OC Enkaryota; Metazoa; Chordata;
OC Cypriniformes; Cyprinidae; Da
OX NCBLTAXID=7955;
RN [1]
RP SEQUENCE FROM N.A.
RP "Genes with homology to mamma
RT "Ceall Death Differ. 7:509-510,
DR EMBL; AF231017; AAP66962.2; -
SQ SEQUENCE 146 AA; 16546 MW;
  RESULT
Q10843
ID Q1
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DT 01
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Brach/danio rerio (Zebrafish) (Zebra danio).

Brach/danio rerio (Zebrafish) (Zebra danio).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;

Cypriniformes; Cyprinidae; Danio.

MCBI_TaxID=/955;
Q10843 PRELIMINARY; PRT;
Q10843;
Q1-NOV-1998 (TrEMBLrel. 08, Created)
                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-20373792; PubMed=10917738; Inchara N., Nunez G.; Inchara N., Nunez G.; "Genes with homology to mammalian apoptosis regulators zebraish."; zebraith Differ. 7:509-510(2000). EMBL; AF231017; AAF66962.2; SEQUENCE 146 AA; 16546 MW; 28A5650BB5107ECB CRC54;
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01-NOY-1998 (TrEMBLrel. 08, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
HYPOTHETICAL 24.1 KDA PROTEIN CY39.03C.
RV2014 OR MTCY39.03C.

Mycobacterium tuberculosis

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                                                                                   *Phylogenetics of Rhododendroideae (Erisubmitted (JUN-1996) to the EMBL/GenBan EMBL: U61331: AAC15245.2; Interpro; IPR000442: Intron_maturse2. Interpro; IPR0002866; Matk.N. Pfam; PF01348; Intron_maturas2: 1. Pfam; PF01348; Matk_N; 1.
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047148;
01-JUN-1998;
01-MAY-2000;
01-DEC-2001;
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Cole S.T., BroSch R., Parkhill J., Garnier T., Churcher C., Harris Gordon S.V., Eiglmeler K., Gas S., Barry C.E. III, Tekala F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quali M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the Complete genome sequence.";
Nature 393:537-544(1998).
                                                   Chloroplast.
NON_TER
SEQUENCE 50
                                                                                                                                                                                                                                  MATK.

Menziesia cillicalyx.

Chloroplast.

Chloroplast.

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;

Asteridae; Ericales; Ericaceae; Menziesia.
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EMBL, Z74025; CAA98415.1; ...
Tuberculist; RY2014; ...
InterPro; IPR003346; Transposase_20.
Pfam; PF02371; Transposase_20; 1.
Hypothetical protein; Complete proteome.
Hypothetical protein; Complete proteome.
SEQUENCE 223 AA; 24132 MW; 70456750017FE
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EMBL/GenBank/DDBJ dat
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Score
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52.5;
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062972;
01-AUG-1998 (Tremblr
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RIBOSOMAL MATURASE.
                                                                                                                          Kurashige Y., Mine & Yukawa T.;
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Eukaryota; V
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Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; Ericales; Ericaceae; Rhododendron.
NCBI_TaxID-75582, 75580;
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                                                        Rhododendron(Ericaceae) t
J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012729; BAA25850
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Kurashige Y., Mine
Yukawa T.;
    InterPro; IPR000442; Intron_
InterPro; IPR002866; MatK_N.
Pfam; PF01348; Intron_matura
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01-DEC-2001 (TrEMBLrel. 1
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Chloroplast.
SEQUENCE 506 AA; 60493
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01-AUG-1998
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J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012730; BAA25851.1;
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                                         Rhododendron albiflorum.

Chloroplast.

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;

Asteridae; Ericales; Ericaceae; Rhododendron.

NCBL_TaxID-49161;
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InterPro; IPR002866; MatK_N.
Pfam; PF01348; Intron_maturas2; 1.
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  Kurashige Y.,
Yukawa T.;
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                   SEQUENCE FROM N.A.
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EMBL; AB012731; BAA25852.1;
Interpro; IPR000442; Intron_
Interpro; IPR002866; MatK_N.
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pfam; pF01348; Intron.maturas2;
pfam; pF01824; MatK_N; 1.
Chloroplast.
SEQUENCE 506 AA; 60449 MW;
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J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012732; BAA25853.1;
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InterPro; IPR002866;
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                      Rhododendron luteum
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nes 12; Conserv
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Viridiplantae;

Streptophyta; Embryophyta;

Tracheophyta;

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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; Ericales; Ericaceae; Rhododendron.
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SEQUENCE 506 AA;
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InterPro; IPR002866; MatK.N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
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EMBL; AB012734; BAA25855.1; -.
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InterPro; IPR002866; MatK_N.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (ukawa T.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Yukawa T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Kurashige Y., Mine M., Kobayashi N.,
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12; Conserv
  (TrEMBLrel. 07,
                                                                                                                                                                                                                                                   Conservative
                                              PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       M., Kobayashi N., Handa T., Takayanagi K.,
                                                                                                                                                                                                                                                                                                                                                               60350 MW;
                                                                                                                                                                                                                                                                    35.5%;
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07,
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Pred. No. 23;
5; Mismatches
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Pred. No. 23;
                                            PRT;
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Matches 12
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Best Local
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062981;
01-AUG-1998 (Tremblrel. 07, C
01-AUG-1998 (Tremblrel. 07, L
01-DEC-2001 (Tremblrel. 19, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; Ericales; Ericaceae; Rhododendron.
                                                                                                                                                                                                       Chloroplast.
SEQUENCE 506 AA;
                                                                                                                                                                                                                                                     InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK_N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
                                                                                                                                                                                                                                                                                                                                                  Rhododendron(Ericaceae) based J. Jpn. Bot. 0:0-0(1998). EMBL; AB012738; BAA25859.1; -.
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Pfam; PF01824; MatK_N; 1.
Chloroplast.
SEQUENCE 506 AA; 60301 MW; 9
                                                                                                                                                                                                                                                                                                                                                                                        "Investigation of Sectional Relationships in the Genus Rhododendron(Ericaceae) based on matK Sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Kurashige Y., Mine M., Kobayashi N.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rhododendron(Ericaceae) based J. Jpn. Bot. 0:0-0(1998). EMBL; AB012737; BAA25858.1;
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Chloroplast.
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Yukawa T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=75576;
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Asteridae; Eri
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InterPro; IPR002866; MatK_N.
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NCBI_TaxID-49463;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RIBOSOMAL MATURASE
391 KPVWAALSDSDIIERFGRIYRNLSHYYSGSLK 422
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nes 12; Conserv
                                           1 KNLWAA-----ORYGRELRRMSDEFEGSFK 25
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                                                                                         l Similarity 37.
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                                                                                                                                                                                                            60449 MW;
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                                                                                                             37.5%;
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Pred. No. 23;
5; Mismatches
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Pred. No. 23;
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                                                                                                                                                                                                            B138208746D99258 CRC64;
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                                                                                         Mismatches
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                                                                                                                                     Length 506;
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RESULT
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   RESULT OC2983 ID 96 AC 962 963 AC 966                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    멂
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Best Local Similarity
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062983;
01-AUG-1998;
01-AUG-1998;
01-DEC-2001;
                                                                                                                                                                                              "Investigation of Sectional Relationships in the Genus Rhododendron(Ericaceae) based on matK Sequences."; J. Jpn. Bot. 0:0-0(1998).
EMBL: AB012740; BAA25861:1; -.
       Chloroplast.
SEQUENCE 506
                                                                InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK.N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
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Kurashige Y., Mine M.,
Yukawa T.;
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01-AUG-1998 (TrEMBLrel.
01-AUG-1998 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
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Kurashige Y., Mine M.,
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NCBI_TaxID=75577;
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InterPro; IPR002866; MatK_N.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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   AA;
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       60393
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37.5%;
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                                                                                                                                                                                                                                                                                                                                                                      Kobayashi N., Handa T.,
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07,
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Pred. No. 23;
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DAAB47A759CFFC46 CRC64;
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                                                      Query Match
Best Local 9
                                           Matches
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Matches 12; Conserv
                                                                                         Chloroplast.
506 AA;
                                                                                                                                                                                                                                                                                                                                       O62984;
01-AUG-1998 (TrEMBLrel.
01-AUG-1998 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
                                                                                                                    InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK.N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
                                                                                                                                                              Rhododendron(Ericaceae) based
J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012741; BAA25862.1; -.
                                                                                                                                                                                                                                                              Spermatophyta; Magnoliophyta; eudicotyledons; Asteridae; Ericales; Ericaceae; Rhododendron.
                                                                                                                                                                                                                                                                        Eukaryota: Viridiplantae: Streptophyta; Embryophyta; Tracheo Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
                                                                                                                                                                                                                                                                                               Chloroplast.
                                                                                                                                                                                                                                                                                                                                                                                        062984
                                                                                                                                                                                                           Kurashige Y.,
Yukawa T.;
                                                                                                                                                                                                                                SEQUENCE FROM
                                                                                                                                                                                                                                                      NCBI_TaxID=49622;
                                                                                                                                                                                                                                                                                                         Rhododendron ferrugineum (Alpenrose).
                                                                                                                                                                                                                                                                                                                                  RIBOSOMAL MATURASE
391 KPVWAALSDSDIIERFGRIYRNLSHYYSGSLK
                                                                                                                                                                                             Investigation of Sectional Relationships in the Genus
                                                                                                                                                                                                                                                                                                                                                                                                                                           391 KPVWAALSDSDIIERFGRIYRNLSHYYSGSLK 422
                                                      Local Similarity
           1 KNLWAA------QRYGRELRRMSDEFEGSFK 25
                                                                                                                                                                                                                                                                                                                                                                                                              15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KNLWAA----
                                           12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12;
                                           Conservative
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                                                                                                                                                                                                                    Mine M.,
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                                                                                               60534 MW;
                                                    35.5%;
37.5%;
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                                                                                                                                                                                                                   Kobayashi N., Handa
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07,
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                                                                                                                                                                                                                                                                                                                                       Last sequence update)
Last annotation update)
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                                                      Score 52.5;
Pred. No. 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 23;
5; Mismatches
                                                                                                                                                                                   on matk Sequences.";
                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                               ADA44B25E92436E8 CRC64;
                                         Mismatches
422
                                                                                                                                                                                                                                                                                                                                                                                       506
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                                                                                                                                                                                                                                                                                    Embryophyta; Tracheophyta;
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                                                               B
                                                                                                                                                                                                                   T., Takayanagi K.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8;
                                                            Length 506;
                                         Indels
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                                         7;
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                                        Gaps
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Search completed: September 20, 2002, 11:03:47 Job time: 1664 sec

Query Match

35.5%;

Score

52.5;

B

8

Length 506

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seg length: 2000000000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Title:
Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OM protein -
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                                   A_Geneseq_032802:*

| SIDS1/gcgdata/hc
| SIDS1/gcgd
1. /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1980.DAT:
2. /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:
3. /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT:
3. /SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:
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Gapop 10.0 , Gapext 0.5
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143
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Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KNLWAAQRYGRELRRMSDEFEGSFKGL (27)
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13.104 Million cell updates/sec
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Pred. No. is the number of results predicted by charce to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

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96 5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5	100.0	100.0	Match
204	204	204	204	204	162	27	26	MF 26	28	27	Match Length DB
19	19	19	19	17	22	21	21	21	22	21	
AAW61318	AAW61317	AAW61316	AAW61315	AAR95168	AAB70370	AAB37003	AAB37002	AAB37001	AAB37055	AAB37056	ID
Mutant BCL-XLYBCL-	Mutant BCL-XL/BCL-	Mutant BCb-XL/BCL-	Murine BCL;XL/BCL-	bc1-x(L)/bc1-2 ass	Shorter murine BAD	Bcl2 polypeptide B	Description				

£ \$

45	*4	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
51	51	51	51	51	51	51	51	51	51	51	72	72	73	73	84	84	86	93	93	102	102	102	102	113	114	114	114	114	114	114	138	138	138
35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	50.3	50.3	51.0	51.0	58.7	58.7	60.1	65.0	65.0	71.3	٠		71.3	79.0	79.7	79.7	79.7	79.7	79.7		96.5		
682	242	241	236	232	232	186	186	181	171	125	20	18	16	16	16	16	16	26	26	59	59	59	59	23	168	168	168	168	168	166	567	204	204
22	21	21	21	21	21	21	21	21	21	21	22	22	21	20	21	20	17	22	21	19	19	19	19	17	22	22	22	21	19	18	22	22	19
ABB52836	AAG25576	AAG54028	AAG54679	AAG54029	AAG25577	AAG54030	AAG25578	AAG25217	AAG25218	AAG25219	AAB70380	AAB70379	AAB37029	AAY05421	AAB37028	AAY05422	AAR95163	AAB70371	AAY96321	AAW61322	AAW61321	AAW61320	AAW61319	AAR95166	AAG67588	AAB48287	AAB70368	AAB13512	AAW55779	AAW32476	AAU00220	AAB70369	AAW58832
Escherichia coli p		S.		S						th:	BAD BH3 domain reg	BAD BH3 domain reg	Bcl2 polypeptide B	Human BAD BH3 doma	Bcl2 polypeptide B	Mouse BAD BH3 doma	bcl-x(L)/bcl-2 ass	BAD BH3 consensus	Mammalian Bad Bcl-	BCL-XL	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-		Amino acid sequenc	Human Bad protein.	Human BAD mutant a	Human cell prolife	Human Bcl-xL/Bcl-2	BBC6 protein for r	Bad-DTTR apoptosis	Longer murine BAD	Murine BAD protein

## ALIGNMENTS

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AAB37056 standard; peptide; 27 AA.

AAB37056;

28-FEB-2001 (first entry)

Bcl2 polypeptide BH3 domain peptide #56.

RESULT
AAB37056
ID AAB3
XX AAB3
XX Cytc
DE Bcl2
XX Cytc
KW Carr
KW Carr
KW Carr
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KW Colc
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KW Colc
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K Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

Homo sapiens.

WO200059526-A1.

12-OCT-2000.

06-APR-2000; 2000WO-US09352

07-APR-1999; 99US-0128202.

(UYJE-) UNIV JEFFERSON THOMAS

Huang Z, Wang J, Zhang Z, Shan ŝ

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WPI; 2000-679325/66.

New peptide conjugates for modulating apoptosis ç for inhibiting

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CC (R-X)n-peptide where n = 1-10; X = C-0, when the R-X group is attached CC (R-X)n-peptide where n = 1-10; X = C-0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC when the R-X group is attached to the C-terminus of the peptide, or a ... CC when the R-X group is attached to the C-terminus of the peptide, or a ... CC side chain of the peptide, where the side chain functional group is COOH; CC or COOH3; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl group, or benzyl. The peptide corresponding to amino acids 72-97 of CC alkyl group, or benzyl. The peptide corresponding to amino acids 72-97 of CC of the BH3 domain of the cell death agonist Bad. The peptide conjugate is CC of the BH3 domain of the cell death agonist Bad. The peptide conjugate is cc gapptosis in cancer cells in the cell serial for inhibiting BCl-2 useful for modulating apoptosis in the cell gell for inhibiting BCl-2 (cc gapptosis in cancer cells. It is also useful for tracting a coute or chronic lymphocytic and non-lymphocytic laukemia, melanoma, or conjugate is also useful for treating a coute or chronic lymphocytic and non-lymphocytic laukemia. The peptide conjugate is also useful for treating a cc anote or chronic lymphocytic and non-lymphocytic laukemia. The peptide conjugate is also useful for treating a conjugate is also useful for treating disorders, acquired the conjugate is also call for treating a conjugate is acquired the conjugate is also call for treating a conjugate is conjugate is and conjugate is a conjugate is and conjugate is conj
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Best Local Similarity 100.0%;
Matches 27; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastopa; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
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Huang
                                                                                                                                                                                                                 06-APR-2000;
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                                                                    (UYJE-) UNIV JEFFERSON THOMAS
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Wang J,
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                                                                                                                                        9905-0128202
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Zhang Z,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   peptide;
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Shan
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Pred. No. 5.1e-15;
Mismatches 0;
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Sequence

28

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The invention relates to a peptide conjugate having the formula:

(C (R X)n peptide where n = 1-10; X = C-0, when the R-X group is attached to the N-terminus of the peptide, or a side chain of the peptide where the functional group of the side chain is MR2 or OH; or X = OOR NH.

CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is coor to give the bonds. Cyclobutyl, cyclopentyl, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 18; Page 19; 74pp; English.
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Query Match Best Local S Matches 27 th 100.0%; Score 143; DB 21; Similarity 100.0%; Pred. No. 5.3e-15; 27; Conservative 0; Mismatches 0; Length Indels 28; 0, Gaps 0

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AAB37001
                       standard;
                       peptide;
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polypeptide внз domain peptide

28-FEB-2001 (first entry)

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; HMJ domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; melanoma; stroke; myocardial infarction.

Homo sapiens.

WO200059526-A1

12-OCT-2000

06-APR-2000; 2000WO-US09352

07-APR-1999; 99us-0128202

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RESULT
ANABJOUZ
ANABJOUZ
ID AABA
XX AABA
AC AABA
XX 28-ID
DE BC11
XX CSYLC
KW CSYLC
KW CSYLC
KW COLL
KW COLL
KW COLL
KW STIC
XX MPEL
X
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CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COOH CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain of the peptide when a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain CC alkyl group, or benzyl. The peptides AB37001-B37058 represent examples CC of the peptide portion of the conjugate. The peptides represent analogues CC of the peptide portion of the coplyagate. The peptide conjugate is useful for modulating apoptosis in the cells of a subject, or for CC two trains a cell lymphoma/leukemia 2 (Bc1-2)-mediated blockage of a poptosis in cancer cells. It is also useful for inhibiting Bc1-2 CC function. In particular, the peptide conjugate is useful for treating a consersion-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or confidence or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating disorders characterized by immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Best Local
                                                                                                                                                                                                                                                  Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB37002;
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                                                                  WO200059526-A1
                                                                                                                                                                                      stroke; myocardial infarction.
                                                                                                                                                                                                                         melanoma; lymphocytic leukemia; neurodegenerative disorder;
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                                                                                                                                                                                                                                                                                                                                                                                                            polypeptide BH3 domain peptide
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Pred. No. 2.9e-14;
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CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain inctional group is COOH CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, CC alkyl group, Or benzyl. The peptides AABJ701-3370% represent examples CC of the peptide portion of the conjugate. The peptides represent analogues CC the BH3 domain of the cell death agonist Bad. The peptide conjugate is useful for modulating apoptosis in the cells of a subject, or for CC acceptable of the cells. It is also useful for inhibiting BCl-2 conjugate is in cancer cells. It is also useful for treating a constant, read or thyroid cancers, neuroblastoma, melanoma, or caute or chronic lymphocytic and non-lymphocytic loukemia. The peptide conjugate is also useful for treating disorders characterized by concertized by increased apoptosis, e.g. neurodegenerative disorders, acquired immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Best Local Similarity
Matches 26; Conser
                              Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bel-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia, neurodegenerative disorder; AIDS; stroke; myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New peptide conjugates for modulating apoptosis or for inhibiting ceil lymphoma/leukemia 2 (Bel-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                      Bcl2 polypeptide BH3 domain peptide #3.
                                                                                                                                                                                         28-FEB-2001
                                                                                                                                                                                                                                                             AAB37003 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           26
                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                       (first entry)
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                                                                                                                                                                                                                                                             peptide;
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                                                                                                                                                                                                                                                               27
                                                                                                                                                                                                                                                                                                                                                                                                                    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 138;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 21;
2.9e-14;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 26.
                                                                                                                                                                                                                                                                                                                                                                                                                      0;
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RRESULT
AAB70370
ID AAB7
XX AAB7
XX AAB7
XX BC1-M
XX Shor
XX BC1-
XX BC1-
XX Inmuk
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                                                                                                                                                                                                                                                                                                                                                                                                                        밁
                                                                                                                                                                                                                                                                                                                                                                                                                                             The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10: X = C=0, when the R-X group is attached cc to the N-terminus of the peptide, or a side chain of the peptide where cC the functional group of the side chain is NH2 or OH; or X = O OR NH, CC when the R-X group is attached to the C-terminus of the peptide, or a cc side chain of the peptide, where the side chain functional group is COOH CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclopexyl optionally cc phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain CC alkyl group, or benzyl. The peptides AAA37001-B37058 represent analogues CC of the peptide portion of the conjugate. The peptide conjugate is cof a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC the BH3 domain of the cell death agonist Bad. The peptide conjugate is capoptosis in cancer cells. It is also useful for inhibiting Bcl-2 CC apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 CC superess Bcl-2. The cancer includes prostate, colorectal, gastric, CC non-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or caute or chronic lymphocytic and non-lymphocytic lewkemia. The peptide conjugate is also useful for treating a colorectal, gastric, c. g. neurodegenerative disorders, acquired by infuned ficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 26
Bcl-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer;
                                                                                       Shorter murine
                                                                                                                                                         AAB70370;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                      AAB70370 standard; protein; 162
                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-APR-1999;
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                                                                                                                                                                                                                                                                                                                                       26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Page 17; 74pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                        27
                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000WO-US09352
                                                                                                                                                                                                                                                                                                                                                                                                                        3
                                                                                       BAD mutant amino acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'n
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                                                                                                                      entry)
                                                                                                                                                                                                                                                                                                                                                      96.5%;
                                                                                                                                                                                                                                                                                                                                                        .08;
                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                      Score 138;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shan S,
                                                                                                                                                                                                                                                                                                                                       Mismatches
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                                                                                                                                                                                                                                                                                                                                                      3e-14;
                                                                                                                                                                                                                                                                                                                                                                     DB 21;
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                                                                                       SEQ ID
                                                                                                                                                                                                                                                                                                                                                                     Length 27;
                                                                                       NO: 3
                                                                                                                                                                                                                                                                                                                                      0
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Matches Query Match Best Local

l Similarity 26; Conserv

96.5%; ilarity 100.0%; Conservative

Score 138; DB 22; ; Pred. No. 2.2e-13; 0; Mismatches 0;

Length 162; Indels

0

0

8

86

AAR95168

7

AAR95168 standard;

Protein;

204

bcl-x(L)/bcl-2 06-JAN-1997

(first entry) associated death

Epitope; murine; bcl-x(L)/bcl-2 associated death promoter; Bad; stroke; polypeptide; bcl-x; cell death; regulate; BH1; BH2; apoptotic cell deat cytokine deprivation; IL-3 dependent cell line; immunodeficiency; AIDS;

promoter protein.

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The present invention describes an isolated or synthetic polypeptide (1) comprising a less than full length amino acid sequence of a mutant Bel-XL/Bel-2 associated cell death regulator polypeptide (BAD) or its fragment, which contains amino acid substitutions at Serll8 of a human BAD, Serl55 of a murine BAD (longer murine BAD) or Serl13 of a murine BAD (longer murine BAD) or Serl13 of a murine BAD, (longer murine BAD) or Serl13 of a murine BAD (longer murine BAD) or Serl13 of a murine BAD, antistriblemenic, vulnerary, cytostatic, antiviral antistriblemenic, vulnerary, cytostatic, antiviral antistriblemenic, vulnerary, cytostatic, antiviral antistriblemenic, antistriblemenic, vulnerary, cytostatic, antiviral antistriblemenic, antistriblemenic, vulnerary, cytostatic, antiviral can be used as an apportosis inducer or inhibitor. BAD polypeptides and polypeptides and polypeptides and compounds and drugs for activity that promote cell survival or apoptosis. Other uses include inducting or inhibiting apoptosis in a cell. Candidate compounds inducting or inhibiting apoptosis in a cell. Candidate compounds infections, immunodeficiency diseases, neurodegenerative diseases, isohamic cell death, reperfusion cell death, wound healing, cancer, viral infections, lymphoproliferative conditions, arthritis, infertility, inflammation and autoimmune diseases. The present sequence represents a specifically
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 7; Page 148-149; 157pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Serll3 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-138734/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (APOP-) APOPTOSIS TECHNOLOGY INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200110888-A1
  162
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RESULT
AAW61315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence represents the murine bcl-x(L)/bcl-2 associated death corrector (Bad) gene. Bad is a 22.1 kD protein which interacts with CC bcl-2 and bcl-x proteins and regulates cell death. It has bomology to the bcl-2-related family clustered in the BH and H2 domain. Bad CC has been found to hybridise to bcl-x(L) and bcl-2 in yeast two-hybrid CC assays and in vivo in mammalian cells. Overexpressed Bad counters the CC death inhibitory activity of bcl-x(L), but is much less effective at countering the death inhibitory activity of bcl-2. Bad expression can accelerate apoptotic cell death induced by cytokine deprivation in an CC II-3 dependent cell line expressing bcl-x(L), and its also counters the CC death repressor activity of bcl-x(L). Bad competes with Bax for binding CC binding to bcl-2 or bcl-x(L) bed cytokine deprivation in an CC II-3 dependent cell line expressing bcl-x(L), and tax for binding CC binding to bcl-2 or bcl-x(L) to form heterodimers. Such agents may be used to treat neurodepenerative diseases, immunodeficiency diseases, cc e.g. AIDS, senescence or ischaemia.
                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Polynucleotide encoding bcl-x(L)/bcl-2 associated death promoter -useful to treat neoplasia and apoptosis and to identify agents inhibiting its binding to bcl-2 or bcl-x(L) to form heteromultimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1996-251465/25.
N-PSDB; AAT29479.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-OCT-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
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                       Murine BCL-XL/BCL-2 associated cell death regulator
                                                             07-OCT-1998 (first entry)
                                                                                                                                                    AAW61315 standard; Protein; 204
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                                                                                                                                                                                                                                                                                                                                                 204 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note- "PEST sequence" 111..130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "BH2 conserved amino acids"
38..61
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note= "PEST sequence"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                         Score 138; DB 17; Length 204; Pred. No. 2.8e-13; 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                         0;
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Db
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Best Local
  Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                             Mutant BCL-XL/BCL-2 associated cell death regulator #1.
                                                                                          07-OCT-1998
                                                                                                                                    AAW61316;
                                                                                                                                                                               AAW61316 standard; Protein;
                                                                                                                                                                                                                                                                                    9
                                                                                                                                                                                                                                                                                                                                                                              n 96.5%; Score 138; DB 19;
Similarity 100.0%; Pred. No. 2.8e-13;
26; Conservative 0; Mismatches 0;
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XXXXXXXX

(first entry)

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Length 204; Indels

0; Gaps

0;

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Chesth regulator) proteins, having an amino acid other than Set at cosistion 112 and/or 136, relative to the murine BAD 204 as sequence. The coposition 121 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence is the murine BAD protein. Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC increases intracellular delivery. Nutant BAD proteins are used to treat CC or prevent diseases associated with reduced apoptosis, e.g. cancer, CC inflammation and autoimmune disease. Polynucleotide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce CC transgenic animals for use as disease models or in drug screening. BAD cc proteins phosphorylated at specified ser are used to screen for enhancers CC and inhibitors of serine-phosphatase. Inhibitors are potentially useful CC in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC aging or ischamic cell death. The apoptotic status of cells is cells in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC phosphorylated BAD, by usual immunoassays. Mutant BAD proteins have composited that does not contend activity than wild-type BAD which can become CC proteins in the specified Ser, forming a product that does not cheterodimerise with BCL-2 or BCL-XL but instead binds to 14-3-3 amily CC proteins in the cytosol, thus promoting cell survival. The mutants with XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  New mutant BAD polypeptide with phosphorylatable serine replaced viseful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Fig 10; 95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-261422/23.
N-PSDB; AAV27833.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD protein: serine substituted mutant; apoptosis; cancer; viral infection.
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  204 AA;
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AAW61
                                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell Cd death regulator) proteins, having an amino acid other than Ser at CD position 112 and/or 136, relative to the murine BAD 204 as sequence. The position 12 and/or 136, relative to the murine BAD 204 as sequence. The CD position proteins of mutant BAD protein able to decrease cell viability (3) CC increases intracellular delivery. Mutant BAD proteins are used to treat to revent diseases associated with reduced apoptosis, e.g. cancer, ... CC viral infection, lymphoproliferation, arthritis, infertility, cc inflammation and autoimmune disease. Polynucleotide sequences encoding that DBD proteins can be used similarly by gene therapy or to produce transgenic enimals for use as disease models or in drug screening, BAD cc proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful in treatment of excessive apoptosis such as AIDS, neurodegeneration, call death. The apoptotic status of cells is aging or ischemic cell death. The apoptotic status of cells have cc greater death-promoting activity than wild-type BAD which can become composition on the specified Ser, forming a product that does not the terrodimerise with BCL-2 or BCL-XL but instead binds to 14-3-3 family cc proteins in the cytosol, thus promoting cell survival. The mutants with BCC Ser substituted cannot bind 14-3-3.
                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 26; Conser
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Synthetic.
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Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD
                                Mutant BCL-XL/BCL-2 associated cell death regulator #2.
                                                                    07-OCT-1998
                                                                                                    AAW61317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 7; Page 59; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-261422/23.
N-PSDB; AAV27834.
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                                                                                                                                    AAW61317 standard;
                                                                                                                                                                                                                   Sequence
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                                                                                                                                                                                                                                                                                                                                                                           204 AA;
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                                                                (first entry)
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                                                                                                                                    Protein;
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                                                                                                                                                                                                                                                                                                                       Length 204;
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protein;
RESULT 3
AAW61318
ID AAW6
XX AAW6
XX AAW6
XX O7-0
XX O7-0
XX Mut:
XX Mur
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Best Local
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Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD protein
                                  Mutant BCL-XL/BCL-2 associated cell death regulator #3.
                                                                    07-OCT-1998
                                                                                                    AAW61318;
                                                                                                                                                                                                                                                                                                                                                                           Sequence
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Synthetic.
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DB; AAV27835.
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                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                           204 AA;
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The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell Cdeath regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The present sequence represents a mutant BAD protein able to decrease cell viability. (2) CC fragments of mutant BAD protein able to decrease cell viability (2) CC fusion proteins of mutant BAD protein able to decrease cell viability (2) CC fusion proteins of mutant BAD protein able to decrease cell viability. (2) CC virely interest of mutant BAD proteins are used to treat CC or prevent diseases associated with reduced approteins, e.g. cancer, viral infection, lymphoproliferation, arthritis, infertility, continued the proteins and autoimmune disease models or in drug screening. (2) CC viral infection, lymphoproliferation, arthritis, infertility, continued to the produce cransgenic animals for use as disease models or in drug screening. (3) CC proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatuse. Inhibitors are potentially useful in treatment of excessive apoptosis such as AIDS, neurodegeneration, cell death. The apoptotic status of cells is determined by measuring relative amounts of phosphorylated and non-phosphorylated and non-phosphorylated on the specified Ser, forming a product that does not the hotological proteins in the cytosol, thus promoting cell survival. The mutants with CC proteins in the cytosol, thus promoting cell survival. The mutants with axis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 7; Page 60; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            serine substituted mutant; apoptosis; cancer; viral infection
96.5%; Score 138; llarity 100.0%; Pred. No. 2 Conservative 0; Mismatche
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           Mismatches
     DB 19;
2.8e-13;
1es 0;
                                                                                             Length 204;
           Indels
           0,
           Gaps
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AAW61318 standard; Protein;
(first entry)
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AAW58832
ID AAW5
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                                                                                                                                                                                                                                                                                                                                                                                             CC death regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence represents a mutant BAD protein Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD with a heterologous polypeptide that CC or prevent diseases associated with reduced apoptosis, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, contains and autoimmune disease. Polynucleotide sequences encoding CC inflammation and autoimmune disease. Polynucleotide sequences encoding CC mutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers CC and inhibitors of serine-phosphatase. Inhibitors are potentially useful in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC determined by measuring relative amounts of phosphorylated and nonce the specified Ser, forming a product that does not phosphorylated on the specified Ser, forming a product that does not the total sering with BCL-2 or BCL-XL but instead binds to 14-3-3 family CC proteins in the cytosol, thus promoting cell survival. The mutants with
                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 7; Page 60-61; 95pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-261422/23.
N-PSDB; AAV27836.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    serine substituted mutant; apoptosis; cancer; viral infection.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UNIW ) UNIV WASHINGTON
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                                                                                                                                                                                                                                                                                                                                                                        Sequence
BAD protein; Bcl-XL/Bcl-2 associated
                                  Murine BAD protein
                                                                  23-JUL-1998
                                                                                                                                   AAW58832 standard;
                                                                                                                                                                                                                      140
                                                                                                                                                                   12
                                                                                                                                                                                                                                  2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
                                                                                                                                                                                                                      nlwaagrygrelrrmsdefegsfkgl 165
                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                                                                                                                                                        204 AA;
                                                                                                                                                                                                                                                                                   96.5%;
ilarity 100.0%;
Conservative (
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                                                                                                                                   protein;
                                                                entry)
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%; Pred. No. 2.8
0; Mismatches
                                                                                                                                     204 AA
 cell death regulator; 14-3-3;
                                                                                                                                                                                                                                                                                   DB 19;
2.8e-13;
thes 0;
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Best Local Similarity 100.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          serine phosphorylation; post-translational modification; apoptosis; signal transduction regulator; phosphoserine phosphatase; senescence; immunodeficiency disease; neurodegenerative disease; infertility; cancer, viral infection; lymphoproliferative condition; arthritis; inflammation; autoimmune diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Serine-phosphorylated Bcl-X-1/Bcl-2 Associated cell Death regulator polypeptide - useful for modulation of apoptosis associated with, e.g. cancer and immunodeficiency diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09-SEP-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                                                                                                                                                               02-MAY-2001
                                                                                                                                                                                                                       AAB70369 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Korsmeyer
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                                                                                                                                                                                                                                                                                                140 blwaagrygrelrrmsdefegsfkgl 165
                                                                                                                                                                                                                                                      13
                                                                                                                                                                                                                                                                                                                             2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                      204 AA;
                                                                                                                                                             (first entry)
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                                                                                                                                                                                                                       protein;
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                                                                                                                                                                                                                                                                                                                                                                                         96.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           English
                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                          score 138; pred. No.
                                                                                                                                                                                                                                                                                                                                                             Mismatches
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                                                                                                                                                                                                                                                                                                                                                                          DB 19;
2.8e-13;
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                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                          204;
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                                                                                                                                                                                                                                                                                                                                                             Gaps
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immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility;

condition; inflammation; autoimmune

lymphoproliferative

Bc1-XL/Bc1-2 associated cell death regulator; BAD;

Longer murine BAD mutant amino acid sequence

SEQ

IJ

NO: 2

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mutant; apoptosis;

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                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention describes an isolated or synthetic polypeptide (I) comprising a less than full length amino acid sequence of a mutant Bcl-XL/Bcl-2 associated cell death regulator polypeptide (BAD) or its fragment, which contains amino acid substitutions at Serila of a human BAD, Seril5 of a murine BAD (longer murine BAD) or Seril3 of a murine BAD). (I) has immunostimulant, neuroprotective, nootropic, antilischaemic, vulnerary, cycostatic, antiviral, can be used as an apoptosis inducer or inhibitor. BAD polypeptides and can be used for screening candidate compounds and drugs for activity that promote cell survival or apoptosis. Other uses include clinducing or inhibiting apoptosis in a cell. Candidate compounds and drugs identified and (mutant) BAD polypeptides are useful in treating clentified and (mutant) BAD polypeptides are useful in treating conditions, artificative conditions, artifitis, infertility, inflammation and autoimmune diseases. The present sequence represents a specifically claimed longer murine BAD mutant amino acid sequence from the present
                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                  Matches
 Chimeric -
                                                                                                                          Bad-DTTR apoptosis-modifying fusion protein.
                                                                                                                                                                                          AAU00220;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Serl18, Serl55 or Serl13 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus 
Synthetic.
                                Huntington's disease.
                                       dipatheria toxin receptor binding domain; DFI hyper-proliferation; Alzheimer's disease; neutransient ischaemic neuronal injury; stroke;
                                                                        Mouse; Bad-DTTR; apoptosis; cancer; spinal muscular atrophy;
                                                                                                                                                          31-MAY-2001
                                                                                                                                                                                                                       AAU00220 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2001-138734/14.
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 Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                                                                                               96.5%; Score 138; DB 22; liarity 100.0%; Pred. No. 2.8e-13; Conservative 0; Mismatches 0;
                                                                                                                                                        (first entry)
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                                            neurodegenerative disorder; ke; spinal cord injury;
                                                                                                                                                                                                                                                                                                                                                                                             Length 204;
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                                                                              tumour;
                                                                                                                                                                                                                                                                                                                                                                 0
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AAW32476
ID AAW3
XX
AC AAW3
XX
DT 15-J
XX
DE BBC6
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                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                          CC functional appotosis-modifying fusion protein is capable of binding a carryon transfer cell. The apoptosis-modifying fusion protein comprises at least two domains: the DTR domain, which targets the fusion protein to the CC target cell and the Bcl-XL domain, which modifies an apoptotic response of the target cell and the Bcl-XL domain, which modifies an apoptotic response of the target cell. The fusion protein is useful for modifying (inhibiting or enhancing) apoptosis in a target cell, such as neuron, CC lymphocyte, cancer, neoplasm, macrophage, epithelial, stem, tumour or hyper-proliferative cell or an adipocyte. It is also useful for reducing apoptosis in a subject after translent ischaemic neuronal injury. The fusion protein may be used to treat carrous diseases and injury. The fusion protein may be used to treat various diseases and injury conditions through inhibition or enhancement of apoptotic cellular response, including neurodegenerative disorders catrophy, stroke episodes and unregulated cell growth as in tumours and various cancers. The apoptosis-modifying fusion protein can be delivered cellular throughout the body and targeted to selective tissue and
                                                                                                                                                                                                                                     Query Match
Best Local S
Matches 26
BBC6 protein
                                15-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel fusion protein for modifying apoptosis in target cell and reducing apoptosis after transient ischaemic neuronal injury, has two domains which targets protein to a cell and modifies apoptotic response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chimeric - Corynebacterium diptheriae Chimeric - Synthetic.
                                                                                             AAW32476 standard;
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N-PSDB; AAS00248.
                                                              AAW32476
                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   modifying fusion protein comprising Bad gene sequence fused linker to diphtheria toxin translocation domain (DTTR). The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The sequence represents the amino acid sequence of Bad-DTTR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 4; Page 59-61; 65pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HARD ) HARVARD COLLEGE.
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                                                                                                                                                                      nlwaagrygrelrrmsdefegsfkgl 186
                                                                                                                                                                                                      NLWAAQRYGRELRRMSDEFEGSFKGL 27
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Conservative 0;
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                              (first entry)
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 regulating
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                                                                                               Protein;
                                                                                               166
 cell death
                                                                                                                                                                                                                                                    Score 138;
Pred. No.
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                                                                                                                                                                                                                                        Mismatches
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thes 0;
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Search completed: September 20, 2002, 10:35:59 Job time: 427 sec
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                                                                                                                                Query Match 79.7%; Score 114; DB 18; Length 166; Best Local Similarity 91.7%; Pred. No. 1.1e-09; Matches 22; Conservative 0; Mismatches 2; Indels
                                                                                                                                                                                                                                The present sequence represents a protein of 166 amino acids. The sequence is disclosed as being a protein called BBC6 which regulates cell death through interaction with Bcl-2. The DNA may be used for the production of the recombinant protein, which can be used in unspecified therapeutic or diagnostic procedures, as a molecular weight marker, and to raise antibodies that can be used in unspecified diagnostic or therapeutic applications and to reduce or eliminate the biological activity of the BBC6 protein in vivo.
                                                                                                                                                                                                                                                                                                                                                               Claim 1; Column 11-12; 7pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 1997-447980/41.
N-PSDB; AAT91561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BBC6 gene; cell death; cell cycle; Bcl2; human.
                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Isolated BBC6 gene - encodes a protein that regulates cell death through interaction with Bcl-2 \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Xudong Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18-JUN-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                    166 AA;
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                             derived by analysis of the total score distribution.
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I: /cgn2_6/ptodata/2,

2: /cgn2_6/ptodata/2,

3: /cgn2_6/ptodata/2,

4: /cgn2_6/ptodata/2,

5: /cgn2_6/ptodata/2,

6: /cgn2_6/ptodata/2,
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Match
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Gapop 10.0 , Gapext
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/cgn2_6/ptodata/2/laa/6A_COMB.pep:*
/cgn2_6/ptodata/2/laa/6B_COMB.pep:*
/cgn2_6/ptodata/2/laa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/laa/backfiles1.pep:*
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US-08-333-565-2
US-08-661-479-2
US-08-733-505A-12
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-733-505A-13
US-08-985-335-7
US-09-410-372-1
US-08-985-335-7
US-09-410-372-1
US-08-933-565-10
US-08-61-479-10
US-08-733-505A-55
US-08-733-505A-57
US-08-733-505A-58
US-08-733-505A-58
US-08-733-505A-59
US-08-733-505A-69
US-08-733-505A-69
US-08-733-505A-69
US-08-733-505A-69
US-08-733-505A-69
US-08-733-505A-69
US-08-734-695A-69
US-08-73-74-797-40
US-09-74-579-3
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20, Appli
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2. Appli
1. Appl
12. Appl
13. Appl
14. Appli
14. Appli
2. Appli
2. Appli
12. Appli
 Appli
Appli
Query Match 96.5%; Sometimes Sest Local Similarity 100.0%; Matches 26; Conservative 0;
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	42	42	42	42	42	42	42	42	42	42	43	43	<b>4</b> 3	43	43	43	43	44	
	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.8	
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ALIGNMENTS	US-09-324-542-94	US-09-095-855-94	US-08-873-970-94	US-08-997-362-94	US-08-997-080-94	US-09-324-542-170	US-09-095-855-170	US-08-997-362-170	US-08-997-080-170	US-09-359-161-7	PCT-US93-11153-40	US-09-088-337B-40	US-09-299-843A-40	US-08-153-848-40	US-09-221-844-18	US-08-718-738-18	US-08-497-312-19	US-09-651-656-27	
	Sequence 94, Appl	Sequence 170, App	Sequence 170, App	Sequence 170, App	Sequence 170, App	Sequence 7, Appli	Sequence 40, Appl	Sequence 40, Appl	Sequence 40, Appl	Sequence 40, Appl		Sequence 18, Appl	Sequence 19, Appl	Sequence 27, Appl					

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NAME/KEY: Protein
LOCATION: 1.204
OTHER INFORMATION:
OTHER INFORMATION:
US-08-333-565-2
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US-08-333-565-2
                                                                                                                                                                                                 TELEFAX: (415) 326-2422
TELEFAX: (415) 326-2422
INFORMATION FOR SEO ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application US/08333565
Patent NO. 5622852
GENERAL INFORMATION:
APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: Bc1-x/Bc1-2 ASSOCIATED CELL DEAT
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie and Crew
                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn Release #1
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/333
FILING DATE: 31-OCT-1994
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 1572
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                          FEATURE:
                                                                                                                            MOLECULE TYPE:
                                                                                                                                                 TYPE: amino acid
STRANDEDNESS: sir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 379 Lytton Avenue
CITY: Palo Alto
STATE: California
COUNTRY: US
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linear
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                                                                                                                            protein
                       /note= "Deduced amino acid sequence
of mouse BAD."
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Score 138; DB 1; ; Pred. No. 7e-14; 0; Mismatches

DB 1; Length 204;

0;

Indels

0;

Gaps

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LOCATION: 1.204
COTHER INFORMATION: 6
COTHER INFORMATION: 6
COTHER INFORMATION: 6
US-08-661-479-2
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US-08-733-505A-1
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Best Local S
Matches 26
                                                                        Sequence 1, Application US/08733505A Patent No. 5856445
                                        GENERAL INFORMATION:
APPLICANT: KORSME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US 08/333,565
FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15726A-000
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (415) 326-2422:
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tent No.
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PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
                                                                                                                                                                                140 NIWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                               OLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 379 Lytton Avenue
STREET: 379 Lytton Avenue
STREET: Galifornia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             140 NIWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
STRANDEDNESS: sir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 11-JU
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                                                                                                                                                                                                                                                   26; Conservative
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100.0%; Pred. No.
The 0; Mismatches
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of mouse BAD."
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Pred. No. 7e-14;
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US-08-733-505A-12
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Best Local S
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APPLICANT: KORSME
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: PATENTIN RELEASE $1.0, Version $1.30 CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/733 cor-
FILING DATE.
               CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,
REFERENCE/DOCKET NUMBER:
                                                                                                                   MEDIUM TYPE: Floppy disk
COMEUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/733,505A
                                                                                                                                                                                                            COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS:
                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION:
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CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
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CORRESPONDENCE ADDRESS:
TELECOMMUNICATION INFORMATION:
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                                                                                                      FILING DATE:
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ZIP: 63105
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26; Conserv
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100.0%; Pred. No. 7e-14;
tive 0; Mismatches (
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US-08-733-505A-13
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RESULT
                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/733,505A
FILING DATE:
CLASSIFICATION: 530
ACTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 965458
FELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-692
INFORMATION FOR SEQ. ID NO: 13:
INFORMATION FOR SEQ. ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 13, Application US/08733505A Patent No. 5856445
GENERAL INFORMATION:
                                                                                                                        Query Match
Best Local
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Best Local Similarity
                                                                                                         Matches
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TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
                                                                                                                                                                                            STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                            140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 7733 FOI
CITY: ST. LOUIS
STATE: MISSOURI
                                                                                                         Local Similarity
Nes 26; Conserv
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                                                           2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            63105
                                                                                                                                                                                                                                            f: 204 amino acids amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       E: HOWELL & HAFERKAMP, L.C.
7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KORSMEYER, STANLEY J.

NVENTION: SERINE SUBSTITUTED MUTANTS OF

NVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide
                                                                                                                      96.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    96.5%; Score 138; 100.0%; Pred. No. tive 0; Mismatch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12:
                                                                                                         0;
                                                                                                                      Score 138;
Pred. No.
                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 2;
7e-14;
                                                                                                                      7e-14;
                                                                                                                                    DB 2; Length 204;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 204;
                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                        0,
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                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent No. 5856445
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                           Sequence 3, Application Patent No. 5965703
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 26; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                   APPLICANT: Horne, William A.
APPLICANT: Oltersdorf, Tilman
TITLE OF INVENTION: Human BAD Polypeptides, Encoding Nucleic
TITLE OF INVENTION: Acids and Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL 6 HAFERKAMP, L.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: KORSMEYE
TITLE OF INVENTION:
TITLE OF INVENTION:
SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 1:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: //3J
CITY: ST. LOUIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                     STREET: 4370 La
CITY: San Diego
STATE: Californi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: HOWELL & HAPEKRAMIF, L... STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                    COUNTRY: U
ZIP: 92122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: UZIP: 63105
                                                                                                                                                                                                            ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 NLWAAQRYGRELRRMSDEFEGSFKGL 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
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                                                                                                                                                                                                                                                                                                                                                                                      Application US/08717123
                                                                                                                                                       California
                                                                                                                                                                                        4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        204 amino acids
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VENTION: SERINE SUBSTITUTED MUTANTS OF

VENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
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                                                                                                                                                                                                            Campbell and Flores
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       us/08/733,505A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 138; DB 2; 
; Pred. No. 7e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 204;
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APPLICATION NUMBER: US/08/717,123

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; LENGTH: 166 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-665-617-2
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                                                                                                                                                                                                                                       REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: CL-8
TELECOMMUNICATION INFORMATION:
TELEPHONE: (352) 375-8100
TELEFAX: (352) 372-8800
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                    Ouery Match 79.7%; Score 114; DB 1; Best Local Similarity 91.7%; Pred. No. 2.8e-10;
                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08665617 Patent No. 5663316 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEPHONE: (619) 535-894
TELEFAX: (619) 535-894
INFORMATION FOR SEG ID NO.
                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/665,617
FILING DATE:
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Sallwanchik, David R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy COMPUTER: IBM PC COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Xudong, Yin
TITLE OF INVENTION: Gene and Protein for Regulation of Cell Death
NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31.815
REFERENCE/DOCKET NUMBER: P-ID 1929
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ATTORNEY/AGENT INFORMATION: NAME: Campbell, Cathryn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   140 NLWAAQRYGRELRRMTDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 2421 N.W. CITY: Gainesville STATE: Florida
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY: U
ZIP: 32606
2 NLWANQRYGRELRRMSDEFEGSFK 25
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CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      E: Sallwanchik & Sallwanchik
2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       USA
                                       Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94.4%;
96.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 135; DB 2
Pred. No. 2e-13;
                                     Mismatches
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                                                                    Length 166;
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                                   Indels
                                   0,
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                                   Gaps
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; MOLECULE TYPE: protein US-08-717-123-2
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US-08-985-335-1
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                                                                                                                                                                                                                                                            Patent No. 6080847
                                                                                                                                                                                                                                                                                Sequence 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 91.7 Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER: IBM PC COMPATIBLE

COMPUTER: IBM PC COMPATIBLE

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PC-DOS/MS-DOS

SOFTWARE: PC-DOS/MS-DOS

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/717,123

FILING DATE: 20-SEP-1996

CLASSIFICATION: 435

ATTORNEY/AGENT INFORMATION:

NAME: Campbell, Cathryn A.

REGISTRATION NUMBER: 31,815

REFERENCE/DOCKET NUMBER: P-ID 1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 2, Application US/08717123 Patent No. 5965703
                                                                                                                                                                                                      GENERAL INFORMATION:
APPLICANT: Hillma
APPLICANT: Yue, H
                                                                  APPLICANT: Lal, Preeti
APPLICANT: Shah, Purvi
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEIN
TITLE OF INVENTION: PROLIFE
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: (619) 535-8949 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: (619) 535-9001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Horne, William A.
APPLICANT: Oltersdorf, Tilman
TITLE OF INVENTION: Human BAD Polypeptides, Encoding Nucleic
TITLE OF INVENTION: Acids and Methods of Use
                                                                                                                                                                                                                                                                                                                                                                     103 NLWAAQRYGRELRRMSDEFVDSFK 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES: 1: CORRESPONDENCE ADDRESS:
                                  STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY:
                                    ADDRESSEE: Incyte Pharmaceuticals, Inc STREET: 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 4370 La Jo
CITY: San Diego
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                              2 NLWAAQRYGRELRRMSDEFEGSFK 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE:
Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1: 168 amino acids amino acid
                                                                                                                                                                                                                                                                                Application US/08985335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E: Campbell and Flores
                                                                                                                                                                                                      Yue, Henry
                                                                                                                                                                                                                       Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79.78;
                                                                                                              PROLIFERATION
                                                                                                                              PROTEINS ASSOCIATED WITH CELL
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0.
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Pred. No. 2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 168;
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US-08-985-335-7
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                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 7, Applicati
Patent No. 6080847
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 1:
                                                                                                                  COUNTRY: USA
ZIP: 94304
COMPUTER READABLE FORM:
MEDJIM TYPE: Diskette
COMPUTER: IBM Compatible
COMPUTER: IBM COMPATIBLE
COPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linea
IMMEDIATE SOURCE:
LIBRARY: SYNORA
CLONE: 358673
                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                        SOFTWARE: FASTSEQ FOR Windows Version 2.0 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/985,335 FILLING DATE: Filed Herewith PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
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FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                  APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEITITLE OF INVENTION: PROLIF
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MEDIUM TYPE: Diskett
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ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
STRANDEDNESS: single
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ZIP: 94304
                                                                                                                                                                                                                        STREET: 3174 FOR CITY: Palo Alto
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                                                                                                                                                                                                                                         ADDRESSEE: Incyte Pharmaceuticals, Inc
STREET: 3174 Porter Dr.
                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            h 79.7%;
Similarity 91.7%;
22; Conservative
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, Lucy J.
36,749
pp
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Pred. No. 2
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.8e-10;
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; IMMEDIATE SOURCE:
; LIBRARY: GenBank
; CLONE: 1683637
US-08-985-335-7
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                                 TELECOMMO...

TELEPHONE: 650-845-4166
TELEFAX: 650-845-4160
INFORMATION FOR SEO ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acids
TYPE: amino acid
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1,
Patent No.
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Best Local
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INFORMATION FOR SEQ ID NO:
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STRANDEDNESS: STRANDEDNESS: STRANDEDNESS: STRANDEDNESS: STRANDESS: STRANDESS: STRANDESS: STRANDEDNESS: STRANDEDNES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: DOS
SOFTWARE: FASTSEG for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/410,372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                     NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REPERENCE/DOCKET NUMBER: PF-
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 9
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PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL TITLE OF INVENTION: PROLIFERATION
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CITY: Palo Alto
STATE: CA
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STRANDEDNESS: sir
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              , Application US/09410372 6281334
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3174 Porter Dr.
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91.78;
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Pred. No. 2.
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2.8e-10;
es 2; Indels
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US-09-410-372-1
RESULT 14
                                                                                                                                                                                      CLONE:
US-09-410-372-7
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                                                                                                         Matches
                                                                                                                       Query Match
Best Local
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Best Local
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                                                                                                                                                                                                                                                                            TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LEWGTH: 168 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                  IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: 1683637
                                                                                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
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NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals,
STREET: 3174 Porter Dr.
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TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT:
                                              103 NLWAAQRYGRELRRMSDEFVDSFK 126
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les 22; Conserv
                                                                       2 NLWAAORYGRELRRMSDEFEGSFK 25
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/09/410,372
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                                                                                                        11 Similarity 91.7
22; Conservative
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Lal, Preeti
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91.78;
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                                                                                                        Score 114; DB 4; pred. No. 2.8e-10; 0; Mismatches 2;
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Pred. No. 2.8e-10;
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                                                                                                                                     Length 160;
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; TOPOLOGY: 1; MOLECULE TYPE: US-08-333-565-10
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NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 1572
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                Sequence 10,
Patent No. 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 21; Conserv
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            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ITEM COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-OCT-1994
CLASSIFICATION: 435
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 23 amino acids
TYPE: amino acid
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MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                            APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: Bci-x/Bci-2 ASSOCIATED CELL DEATH
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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                                                                                                                                               CITY: Palo Alto
STATE: California
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STATE: California
   APPLICATION NUMBER:
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Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
US/08/661,479
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Pred. No.
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         Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                  48
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Dad protein - mouse
C:Species: Mus musculus (house mouse)
C:Pate: 03-War-1995 *sequence_revision 03-War-1995 *text_change 05-Nov-1999
C:Pate: 03-War-1995 *text_change
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## ALIGNMENTS

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A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residues: 1-946 < NAK>
A; Residues: 1-946 < NAK>
A; Cross-references: DBJ: D89286; NID: 91694689; PIDN: BAA13939.1; PID: 91694690
A; Cross-references: DBJ: Ner
A; Experimental source: liver
A; Accession: PC4485
A; Molecule type: protein
A; Residues: 55-64;140-146;151-156;424-447;500-528;577-605 < NA2>
C; Comment: In the plasma three inter-alpha-trypsin inhibitor heavy chains 1, that the complexes play important role for panceatic cancer.
C; Superfamily: inter-alpha-trypsin inhibitor complex component II
F; 261-264,717-916/Disulfide bonds: #status predicted inter-alpha-trypsin inhibitor heavy chain 2 - golden hamster G:Species: Mcsocricetus auratus (golden hamster) C:Date: 23-Sep-1997 #sequence\_revision 23-Sep-1997 #text\_change 20-Jun-2000 C:Accession: JC5575; pC4485 R:Nakatani, T:; Suzuki, Y:; Yamamoto, T.; Sinohara, H. R. Nakatani, T:; Suzuki, Y:; Yamamoto, T.; Sinohara, H. J. Biochem. 122, 71-82, 1997 A:Title: Molecular cloning and sequencing of cDNAs encoding three heavy-chain precurs sin inhibitor heavy chain family.

A;Reference number: JC5574; MUID:97420688 A;Accession: JC5575 Conservative 96,5%; Score 138; DB 2; ; Pred. No. 9.4e-13; 0; Mismatches 0; Length 204; Indels 0; Gaps N 0,

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A:Status; preliminary; nucleic a
A:Molecule type: DNA
A:Residues; 1-223 <COL>
A:Cross-references: GB:Z74025; G
A:Experimental source: strain H3
C:Genetics:
A:Gene: Rv2014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Inter-alpha-inhibitor H2 chain - mouse
C; Species: Mus musculus (house mouse)
C; Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 20-Aug-1999
C; Accession: S54354
R; Chan, P; Risler, J.L.; Raguenez, G; Salier, J.P.
Biochem, J; 306, 505-512, 1995
A; Title: The three heavy-chain precursors for the inter-alpha-inhibitor family in A; Reference number: S54353; MUID:95194326
A; Reference number: S54353; MUID:95194326
A; Reseasion: S54354
A; Reseasion: S54354
A; Reseasion: S54354
A; Reseasion: S54355
A; Cross-references: EMBL:X70392; NID:9695633; PIDN:CAA49842.1; PID:9695634
C; Superfamily: Inter-alpha-trypsin inhibitor complex component II
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Nature 393, 537-544, 1998

A:Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barreil, B.G.

A:Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome A; Reference number: A70500; MUID:98295987

A:Starine, T. T.; Taylor, K.; Whitehead, S.; Barreil, B.G.

A; Reference number: A70500; MUID:98295987

A:Starine, T. T.; Taylor, K.; Whitehead, S.; Barreil, B.G.

A; Reference number: A70500; MUID:98295987
2-dehydro-3-deoxyphosphoheptonate aldolase (EC 4.1.2.15) ARO4 -
N;Alternate names: 3-deoxy-D-arabino-heptulosonate-7-phosphate s
C Species: Saccharomyces cerevisiae
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Best Local
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Best Local Similarity 58.8
Matches 10; Conservative
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Best Local
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9; Conservative
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58 8%;
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H37Rv
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; Pred. No. 10;
5; Mismatches
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Pred. No. 14;
5; Mismatches
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Pred. No.
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RESULT 6
A42095 Arabidopsis thaliana
floral homeotic protein APETALA3 (AP3) - Arabidopsis thaliana
floral homeotic protein APETALA3 (AP3) - Arabidopsis thaliana
floral homeotic protein APETALA3 MADS-box regulatory protein AP3
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C:Accession: A42095; S55633; T47593
R:Jack T: Brockman, L.L.; Meyerowitz, E.M.
Cell 68, 683-697, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Gene: SGD:ARO4
A:Goos-references: SGD:S0000453; MIPS:YBR249c
A:Map position: 2R
A:Map position: 2R
C:Function:
C:Function:
A:Description: aldehyde-lyase; carbon-carbon lyase
A:Pathway: aromatic amino acid biosynthesis; shikimate pathway
A:Note: first step in shikimate pathway
A:Note: first step in shikimate pathway
C:Superfamily: phospho-2-dehydro-3-deoxyheptonate aldolase
C:Keywords: aldehyde-lyase; aromatic amino acid biosynthesis; carbon-carbon
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A. Cross-references: GB:L20296; NID:g311101; PIDN:AAA65607.1; PID:g311102
A. A. Committed to the protein Sequence Database, August 1994
A. Reference number: S45906
A. A. Committed to the protein Sequence Database, August 1994
A. Residues: I-370 < ALJ>
A. Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
A. Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
A. Reference number: S45940
A. Reference number: S45940
A. Reference number: S45940
A. Recsidues: I-370 < AIG-
A. Residues: I-370 < AIG-
A. Cross-references: EMBL:Z36118; NID:g536664; PIDN:CAA85212.1; PID:g536665; MIPS:YBR2
A. Kuenzler, M.; Paravicini, G.; Egil, C.M.; Irniger, S.; Braus, G.H.
Cene 113, 67-74, 1992
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A:Residues: 1-204.208-370 <KUE>
A:Residues: 1-204.208-370 <KUE>
A;Cross-references: EMBL:X61107
A;Cross-references: EMBL:X61107
A;Kuenzler, M.; Balmelli, T.; Egli, C.M.; Paravicini
J. Bacteriol. 175.5548-5558, 193
A:Title: Cloning, primary structure, and regulation
A;Reference number: A48651; MUID:93374850
A;Accession: B48651
A;Accession: B48651
A;Scatus: preliminary
A;Scatus: preliminary
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A;Title: Cloning, primary structure and regulation of the ARO4
A;Reference number: JN0322; MUID:92225349
A;Accession: JN0322
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A;Residues: 352-370 <KU2>
A;Cross-references: GB:X61107
C;Comment: This enzyme catalyzes the condensation
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Best Local Similarity 47.0
Matches 10; Conservative
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Pred. No. 7.5;
b; Mismatches
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R; Note: sequence extracted from NCBI backbone (NCBIN:82520, NCBIP:82521)
R; Okamoto, H.; Yano, A.; Shiraishi, H.; Okada, K.; Shimura, Y.
Plant Mol. Biol. 26, 465-472, 1994
A; Title: Genetic complementation of a floral homeotic mutation, apetala3, with an Arabid A; Reference number: S52633; MUID:95036018
A; Accession: S52633
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A; Residues: 1-232 < BLO
A; Cross-references: EMBL: AL132971
A; Experimental source: cultivar Columbia; BAC clone T12E18
C; Genetics:
A; Map position: 3
A; Introns: 63/2; 85/3; 106/2; 139/3; 153/3; 168/3
A; Note; T12E18.30
C; Superfamily: transcription factor squa; serum response factor C; Keywords: DNA binding; nucleus; transcription regulation
F; 2-57/Domain: serum response factor DNA-binding domain hom
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A;Accession: T47593
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                        C;Accession: C84338

R;Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.D.;
; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, D.G
Jung, K.H.; Alam, M.; Freitas, T.
Jung, K.H.; Alam, M.; Freitas, T.
Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000

A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe,
A;Attle: Genome sequence of Halobacterium species NRC-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     spermidine/putrescine ABC transporter [imported] - Halobacterium sp. NRC-1 C;Species: Halobacterium sp. NRC-1 C;Species: Halobacterium sp. NRC-1 C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
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R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes submitted to the Protein Sequence Database, March 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Title: The homeotic gene APETALA3 of Arabidopsis thaliana encodes a MADS box A; Reference number: A42095; MUID:92154682
A; Accession: A42095
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                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-374 <STO>
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A;Molecule type: DNA
A;Residues: 1-63 <OKA>
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Keywords: DNA binding; nucleus; transcription regulation;
2-57/Domain: serum response factor DNA-binding domain homology <SRE>
                                                                                 Query Match
Best Local 9
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Best Local Similarity
Matches 12; Conserv
                                                                  Matches
                                                                                                                                                                                        Genetics:
                                                                                                                                                                                                          Cross-references: GB:AE004437; NID:g10581314; PIDN:AAG20071.1; GSPDB*GN00138
                                                                                                                                                                                                                                                                     Status: preliminary
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                                                               Local Similarity
les 10; Conser
                        12 ELRRMSDEFEGSF 24
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                                                                                 35.0%;
                                                                                                                                                                                                                                                                                                             MUID: 20504483
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                                                               <del>,</del>
                                                                                 Score 50;
Pred. No.
                                                                  Mismatches
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15;
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6.5;
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C; Genetics:
A; Gene: PA1031
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A; Residues: 1-453 <STO>
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A; Residues: 1-516 <STO>
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12; Conser
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RESULT 8
AS6733
RESULT 8
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AS6737
RESCRICT ARCHITICALL SYNTHASE [Imported] - Arabidopsis thaliana
C;Species Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C;Accession: A96733
R:Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alon
Chin, C.W.; Chungy, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar,
ansen, N.F.; Hujhes, B.; Hulzar, L.
Rictor, M.; Roney, T.; Dewild, S.; Liu, S.K.; Liu, S.A.; Mariti, R.J., Mar
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A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, A;Reference number: A82950; MUID:20437337 A;Accession: E83517
                                                                                                                                                                                                                                                                                                                                                                                                                                               R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, J.; Lory, S.; Olson, M.V. Nature 406, 959-964, 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           conserved hypothetical protein PA1031 [imported] - Pseudomonas aeruginosa (strain C;Species: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000 C;Accession: E83517
                                                                                                                                                                                                                                                     A;Cross-references: GB:AE004535; GB:AE004091; NID:g9946936; PIDN:AAG04420.1; GSPDB:GN
A;Experimental source: strain PAOI
                                           4 WAAQRYGR--ELRRMSDE 19
                                                                                         Conservative
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55.6%;
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i; Mismatches
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C;Special C; Special C; Sachau, H.G. C; Satte: 06-Mar-1yy-C; Sachau, H.G. C; Accession: S40376
R; Klein, R.; Jaenichen, R.; Zachau, H.G. R; Klein, R.; Jaenichen, R.; Zachau, H.G. R; Klein, Sachau, H.G. Sachau, H.G
C:Species: Rhizomucor racemosus
C:Date: 28-Mar-1991 *sequence_revision 28-Mar-1991 *text_change 19-Jan-2001
C:Accession: C36365
R:Casale, W.L.; McConnell, D.G.; Wang, S.Y.; Lee, Y.J.; Linz, J.E.
Mol. Cell. Biol. 10, 6654-6663, 1990
A:Title: Expression of a gene family in the dimorphic fungus Mucor racemosus which exhit A:Accession: C36365; MUID:91061774
A:Reference number: A36365; MUID:91061774
A:Rolecule type: DNA
A:Residues: 1-206 <CAS>
A:Cross-references: GB.M5517
C:Superfamily: ras transforming protein; translation elongation factor Tu homology
C:Keywords: GTP binding; nucleotide binding; P-loop
F:11-126/Domain: translation elongation factor Tu homology <ETU>
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A:Molecule type: mRNA
A:Residues: 1-314 <BATy
A:Cross-references: EMBL:X98245; NID:g1370602; PIDN:CAA66901.1;
A:Experimental source: cultivar clipper; root tip
C:Superfamily: annexin repeat homology
E:14-85/Domain: annexin repeat homology <AXR>
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C; Date: 24-Mar-1999
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A; Residues: 1-134 <KLE>
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Date: 06-Mar-1994 #sequence_revision 26-May-1995 #text_change 21-Jan-2000
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54 AEAYGKELLRALGDEIHGKFE 74
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4; Mismatches
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Pred. No. 8.7;
1; Mismatches
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A; Accession: S74307
A; Molecule type: protein
A; Residues: 40-54 <CUI>
                                                                                                                                                                                                            A;Molecule type: DNA
A;Residues: 1-526 <BVV>
A;Residues: 1-526 <BVV>
A;Cross-references: EMBL:AL050352; GSPDB:GN00062; ATSP:F27B13.80
A;Experimental source: cultivar Columbia; BAC clone F27B13
                                                          A; Cross-references:
                                                                              A; Molecule type: mRNA
A; Residues: 'L', 3-526
                                                                                                                         A; Reference number: A; Accession: S71362
                                                                                                                                           A; Title: Characterization of an Arabidopsis thaliana cDNA encoding A; Reference number: S71362; MUID:96314555
                                                                                                                                                                                  R;Curien, G.; Dumas, R.; Ravanel, S.; Douce, FEBS Lett. 390, 85-90, 1996
                                                                                                                                                                                                                                                                                                          R;Bavan, M.; Zimmermann, W.; Grueneisen, A.; Wambutt, R.; Bancroft, I.; Mewes, H.W.; submitted to the Protein Sequence Database, May 1999 A;Reference number: Z16442 A;Accession: T08545
                                                                                                                                                                                                                                                                                                                                                                                      N;Alternate names: protein F27Bi3.80
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 07-Dec-1999
C;Accession: T08545; S71362; S74307
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C;Superfamily:
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A;Residues: 1-220 <ARN>
A;Cross-references: GB:AE001772; GB:AE000512; NID:g4981693; PIDN:AAD36230.1; PID:g498
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A;Accession: F72289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G;Accession: F72289

R;Nelson, K.E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       threonine synthase (EC 4.2.99.2) precursor - Arabidopsis thaliana
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F;123-126/Region: GTP-binding NKXD motif
F;153-155/Region: GTP-binding NKXL motif
F;23,24,42,123,124,126,153/Binding site: Mg-GTP (Lys,
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Best Local Similarity 62.5
Matches 10; Conservative
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8; Conser
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                                                            EMBL: L41666;
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Pred. No.
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Antho-RFamide neuropeptide 19 repeat precursor - sea anemone (Calliactis parasitica) (C.Species: Calliactis parasitica) (C.Accession: A39172 (C.J. paramer, D.; Schmutzler, C., Diekhoff, D.; Grimmelikhuijzen, C.J.P. R.Darmer, D.; Schmutzler, C., Diekhoff, D.; Grimmelikhuijzen, C.J.P. Proc. Natl. Acad. Sci. U.S.A. 88, 2555-2559, 1991 (A.J. proc. Natl. Acad. Sci. U.S.A. 88, 2555-2559, 1991 (A.J. proc. Natl. Accession: A39172; MUID:91172845 (A.J. proc. A39172; MUID:91172845 (A.J. proc. A39172; MUID:91172845 (A.J. proc. A39172) (A.J. proc. A3917
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A:Gene: ATSP:F27B13.80
A:Gene: ATSP:F27B13.80
A:Map position: 4
A:Genome: nuclear
C:Keywords: carbon-oxygen lyase; chloroplast
E:1-39/Domain: transit peptide (chloroplast) #status predicted <TNP>
E:40-526/Product: threonine synthase #status experimental <MAT>
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Search completed: September 20, 2002, 10:39:13 Job time: 485 sec
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Best Local Similarity 35.3%;
Matches 12; Conservative
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| : ||||| : | ||:| |
89 KRRYYPGRYGREFQGRFGREFQGRF 113
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; Pred. No. 42;
6; Mismatches
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RESULY 1
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in Function: Promotes cell death. Successfully competes for the binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2. Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

-: SUBUNIT: Forms heterodimers with the anti-apoptotic proteins, Bcl-x(L), Bcl-2 and Bcl-w. Also binds protein S100A10 (By similarity). The Ser-112/Ser-136 phosphorylated form binds 14-3-3 proteins.

-: SUBCELLULAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm.

-: DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bcl-2 family.

-: PYM: Phosphorylated on Ser-112 in response to survival stimuli. Subsequent phosphorylation on Ser-136 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-155, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival.
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01-NOV-1997 (Rel. 35, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Bcl2-antagonist of cell death (BAD) (Bcl-2 binding component
6) (Bcl-xL/Bcl-2 associated death promoter).
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MEDLINE-95136361; PubMed-7834748;

Yang E., Zha J., Jockel J., Boise L.H., Thompson C.B., Korsmeyer S.J.:

"Bad, a heterodimeric partner for Bcl-XL and Bcl-2, displaces Bax and promotes cell death.";

Cell 80:285-291(1995).
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Datta S.R., Katsov A., Hu L., Petros A., Fesik S.W., Yaffe M.B., Greenberg M.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Del Peso L., Gonzalez-Garcia M., Page C., Herrera R., Nunez G.; "Interleukin-3-induced phosphorylation of BAD through the protein kinase Akt.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BH3 domain phosphorylation."; Mol. Cell 6:41-51(2000).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 278:687-689(1997).
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AROG\_YEAST

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Database

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Scoring table: Sequence:

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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd

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                                                                                                  MEDLINE=98194755; PubMed=9535132; D'Agata V., Magro G., Travali S., Musco
                                                                                                                                                            Hsu S.Y., Kaipia A., Zhu L., Hsueh A.J.W.;
"Interference of BAD (Bcl·xL/Bcl·2-associated death promoter)-induced apoptosis in mammalian cells by 14-3-3 isoforms and Pll.";
Mol. Endocrinol. 11:1858-1867(1997).
                                                                                                                                                                                                                                                                               Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                            16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Bcl2-antagonist of cell death (BAD) (Bcl-2 binding component)
(Bcl-xL/Bcl-2 associated death promoter).
                                                                                                                                                                                                                                                                                                                                                                   BAD_RAT STANDARD 035147; 070256; 09JHX1; 16-OCT-2001 (Rel. 40, C. 16-OCT-2001 (Rel. 40, L.
                                                                            "Cloning and expression the rat brain.";
                MEDLINE~21109372;
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                                                                                                                                                                                                                    MEDLINE-98034386; PubMed-9369453;
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                                                              243:137-140(1998).
              PubMed=11161472;
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Sciurognathi; Muridae;
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"Functional characterization of two splice variants of rat BAD and their interaction with Bcl-w in sympathetic neurons.";

Whol. Cell. Neurosci. 17:97-106(2001).

"Itheir interaction with Bcl-w in sympathetic neurons.";

Wol. Cell. Neurosci. 17:97-106(2001).

"Itheir interaction with Bcl-w interest for the bunding to Bcl-x(L), Buccessfully competes for the binding to Bcl-x(L), Buccessfully competes for the level confliction of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

"Itheir interest in a summary in a su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AF003523; AAC53374.1; -. EMBL; AF031227; AAC15100.1; -. EMBL; AF279910; AAF91427.1; -. EMBL; AF279911; AAF91428.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaborate between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on use by non-profit institutions as long as its content is in no
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PTM: Phosphorylated on Ser-131 in response to survival stimuli. Subsequent phosphorylation on Ser-137 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-156, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival. Ser-137 is the major site of AKT/PKB phosphorylation, Ser-156 the major site of protein kinase A (CAPK) phosphorylation (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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SDAGGR -> Alternative splicing WITH 14-3-3 PROTEINS. S->A: NO HETERODIMERI EVAMEPLRYWTALRRLC (IN ISOFORM BETA).
S->A: NO EFFECT ON HETERODIMERIZATION PROTEINS. SIMILARITY) PHOSPHORYLATION (BY CAPK AND PKB) SIMILARITY) LPRPKSAGTATQMRQSASWTRIIQSWWDRNLGKGGSTPSQ PHOSPHORYLATION (BY CAPK AND PHOSPHORYLATION (BY CAPK AND PKB) -> EELTYSVEFLPVRAIAMEGWPLLWSFQSFPHTLPPTPP DAGGR -> ERRGRK (IN REF. 1).
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Local Similarity

96.5%; pr 100.0%; pr

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                                                                                                                                                                                                     "Rationale for Bcl-xL/Bad peptide complex mutagenesis, and biophysical studies."; protein Sci. 9:2528-2534 (2000).
-1- FUNCTION: promotes cell death. Success
                                                                                                                                                                                                                                                            Mack J., Sw.;
Fesik S.W.;
                                                                                                                                                                                                                                                                        Petros A.M., Nettesheim D.G., Wang Mack J., Swift K., Matayoshi E.D.,
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MEDLINE-98049554; P
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NCBI_TaxID=9606;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (NOV-1996) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                u D.X., Li Z., Huang B., Chen human protein that interacts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
                                                              binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the of heterodimerization of these proteins with BAX. Can reverse death repressor activity of Bcl-x(L), but not that of Bcl-2 similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways. SUBUNIT: Forms heterodimers with the anti-apoptotic proteins x(L), Bcl-2 and Bcl-w. Also binds protein S100Al0 (By similar The Ser-75/Ser-99 phosphorylated form binds 14-3-3 proteins similarity).

SUBCELULIAR LOCATION: Outer mitochondrial membrane. Upon
SUBCELLULAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm.
TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES.
DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAL BAX for their pro-apoptotic activity and for their interact with anti-apoptotic members of the Bcl-2 family.
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(OCT-1997) to
                                                                                                                                                                                                                                                                                                                                         (JAN-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                          ₽.
                                                                                                                                                                                                                                                                                                      PubMed-11206074;
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h Bcl-2
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                                                                                                        (By similarity).
              interaction
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                                                                                                                                                                                                                                              structure
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RESULT 4
ITH2_M ASAU
ID ITH2_M AC P97279
AC P97279
DT 15-JUL
DT 15-JUL
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DT 15-JUL
DT 11-JUL
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RT NASAT
RT 15-JUL
RT 15-J
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Best Local
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P97279;
15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation updat
'---alpha-trypsin inhibitor heavy chain F
                                                                                                                                                                                                                                      Eukaryota;
Mammalia; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of HighInformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entitles requires a license agreement (See http://www.isb-sorsend an email to license@isb-sib.ch).
                MEDLINE=97420688; PubMed=9276673;
Nakatani T., Suzuki Y., Yamamoto T., Sinohara H.;
"Molecular cloning and sequencing of cDNAs encoding three precursors of the inter-alpha-trypsin inhibitor in Syrian implications for the evolution of the inter-alpha-trypsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; U66879; AAB36516.1; -. EMBL; AF031792; AAB72092.1; -. EMBL; AF031533; AAB88124.1; -. EMBL; BC001901; AAH01901.1; -.
                                                                                                                               TISSUE-Liver;
                                                                                                                                                  SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 NLWAAQRYGRELRRMSDEFEGSFK 25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: CONTAINS 1 BCL-3 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PTM: Phosphorylated on Ser-75 in response to survival stimuli. Subsequent phosphorylation on Ser-99 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-118, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival. Ser-99 is the major site of AKT/PKB phosphorylation, Ser-118 the major site of protein kinase A (CAPK) phosphorylation (by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1G5J; 07-FEB-01.
603167; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
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                                                                                                                                                                                                                                           Eutheria;
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110 124
75 75
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91.78;
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PHOSPHORYLATION SIMILARITY).
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); Mismatches
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Sciurognathi;
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chain H2 |
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(See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4e-10;
                                                                                                                                                                                                                                                                Vertebrata;
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                                                                                                                                                                                                                                           Muridae;
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                     heavy-chain
hamster:
inhibitor
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RESULT 5
ITH2_MOUSE
ID ITH2_MOUSE
AC Q61703;
DT 15-JUL-1998
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Best Local s
Matches
                                                                                                                                                                                                           CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                Glycoprotein.
SIGNAL
PROPEP 1
                                                                                                                                                                                                                                                                            CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                    CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no. way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/anwounce/or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY).

SIMUNIT: I -ALPHA-I PLASMA PROTEASE INHIBITORS ARE ASSEMBLED FROM ONE OR TWO HEAVY CHAINS (H1, H2 OR H3) AND ONE LIGHT CHAIN, ONE OR TWO HEAVY CHAINS (H1, H2 OR H3) AND ONE LIGHT CHAIN, BIKUNIN. INTER-ALPHA-INHIBITOR (I-ALPHA-I) IS COMPOSED OF H1, H2 AND BIKUNIN, INTER-ALPHA-INHIBITOR (P-ALPHA-I) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-I) OF H3 AND BIKUNIN.

PTM: HEAVY CHAINS ARE INTERLINKED WITH BIKUNIN VIA A CHONDROITIN 4-SULFATE BRIDGE TO THE THEIR C-TERMINAL ASPARTATE (BY SIMILARITY: BELONGS TO THE ITH FAMILY.

1- SIMILARITY: BELONGS TO THE ITH FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00092; vwa; 1.
SMART; SM00327; VWA; 1
PROSITE; PS50234; VWFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Yanamoto T., Yanamoto K., Sinohara "Inter-alpha-trypsin inhibitor and hamater urine and plasma.";
J. Biochem. 120:145-152(1996).
                                                                                                                                                                                                                                                                                                                                                                     CHAIN
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MEDLINE-97018241; PubMed-8864857;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   J. Biochem.
[2]
                                                                                                                                                                                                                                                               BINDING
                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                            PROPEP
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                                                                                          212
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION: MAY ACT AS A CÁRRIER OF HYALURONAN IN SERUM OR AS BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO RECULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ESSENTIAL TO CELLS UNDERGOING
                                                                                          NVWIVELQGMRFLHVPDTFEGHFQGV 237
                                                                                                               NLWAAQRYGRELRRMSDEFEGSFKGL 27
                                                                                                                                                                                                                                                                                                                                                                                                                        protease inhibitor;
                                                                                                                                           Similarity 34. 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IPR002035; vWFA.
                                                                                                                                                                                                            946
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118
263
445
578
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                          STANDARD;
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VWFA;
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468
118
263
445
578
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54
702
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N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
CHONDROITIN 4-SULPATE,
                                                                                                                                             5
                                                                                                                                          Score 54; DB pred. No. 3; 5; Mismatches
                                                                                                                                                                                                                                      (BY SIMILARITY).
V -> Y (IN DEE
                                                                                                                                                                                                                                                                                                                                          BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                VWFA
                                                                                                                                                                                                                                                                                                                                                                                  POTENTIAL.
BY SIMILARITY
                            PRT;
                                                                                                                                                                                                                                                                                                                                                                     INTER-ALPHA-TRYPSIN
                                                                                                                                                                                                       -> I (IN REF. 2).
CA8BF565458E7B2E CRC64;
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C STRAIN-C57BL/6N; TISSUE-Liver;

X MEDLINE-95194356; PubMed-7534067;

X Chan P., Risler J.-L., Raguenez G., Salier J.-P.;

A Chan P. Risler J.-L., Raguenez G., Salier J.-P.;

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A Chan P., Risler J.-L., Raguenez G., Salier J.-P.;

A Chan P., Risler J.-L., Raguenez G., Raguenez G., Salier J.-P.;

A Chan P., Raguenez G., Raguenez G.,
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Mammalia; E
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CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                         Glycoprotein.
SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002035; vWFA. Pfam; PF00092; vwa; 1. SMART; SM00327; VWA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Inter-alpha-trypsin inhibitor heavy chain H2 precursor (ITI heavy chain H2).
                                                                                                                                                     SEQUENCE
                                                                                                                                                                                              BINDING
                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                           PROPEP
                                                                                                                                                                                                                                                                                                                                                  CHAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                       Serine protease inhibitor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                            PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MGD; MGI:96619; Itih2.
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SIMILARITY: BELONGS TO THE ITIH FAMILY.
SIMILARITY: CONTAINS 1 VWFA DOMAIN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY).
SUBUNIT: I-P
    NLWAAQRYGRELRRMSDEFEGSFKGL 27
                                                                     Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lus (Mouse).
; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
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Pred. No.
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N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
CHONDROITIN 4-SULFATE,
                                                                                                                                                                              (BY SIMILARITY
                                                                                                                                                                                                                                                                                                        BY SIMILARITY
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                                                  Mismatches
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CROSS-LINK S
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A RESCUTION OF THE PROPERTY OF
                                                                 EMBL; X61107; CAA43419.1; -.
EMBL; L20296; AAA65607.1; -.
EMBL; Z36118; CAA85212.1; -.
PTR; S38185; S38185.
HSSP; P00886; 10R7.
SGD; S000043; ARO4.
InterPro; IPR001785; DAHP_synth_1.
Pfam; PF00793; DAHP_synth_1; 1.
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01-FEB-1994 (Rel. 28, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
90-MAY-2000 (Rel. 39, Last annotation update)
Phospho-2-dehydro-3-deoxyheptonate aldolase, tyrosine-inhibited
(EC 4.1.2.15) (Phospho-2-keto-3-deoxyheptonate aldolase) (DAHP
Synthetase) (3-deoxy-D-arabino-heptulosonate 7-phosphate synthas
ARO4 OR YBR249C OR YBR1701
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-S288C;
MEDLINE-94078675; PubMed-8256522;
Doignon F., Biteau N., Aigle M., Crouzet M.;
Potent complete sequence of a 6794 bp segment located on the of chromosome II of Saccharomyces cerevisiae. Finding of a complete sequence of chromosome II of Saccharomyces cerevisiae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YEAST
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Kuenzler M., Paravicini G., Egli C., Irniger S., Braus G.H.;
Kuenzler M., Paravicini G., Egli C., Irniger S., Braus G.H.;
"Cloning, primary structure and regulation of the ARO4 gene, encoding
the tyrosine-inhibited 3-deoxy-D-arabino-heptulosonate-7-phosphate
synthase from Saccharomyces cerevisiae.";
Gene 113:67-74(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Saccharomyces cerevisiae (Baker's yeast).
Eukaryota: Fungi; Ascomycota; Saccharomycotina; Saccharomycetas;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
MCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Piam; PF00793; DAHP_synth_1; 1.
ProDom; PD005060; DAHP_synth_1; 1.
Aromatic amino acid biosynthesis; Lyase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           dUTPase in a yeast.";
Yeast 9:1131-1137(1993).
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Matches 10
RX MEDILINE-21016730; PubMed-11130713;
RX MEDILINE-21016730; PubMed-11130713;
RA Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,
RA Salanoubat M., Lemcke K., Rieger M., Perez-Alonso M., Obermaier B.,
RA Parlmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
RA Delseny M., Boutry M., Artiguenave F., Robert C., Brottler P.,
RA Mincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
RA Mincker P., Cattolico L., Weissenbach J., Saurin W., Ouetier F.,
RA Mincker P., Cattolico L., Weissenbach J., Sunin W., Ouetier F.,
RA Wiedelmann R., Kranz H., Voss H., Holland R., Brandt P., Nyakatura G.,
RA Wiedelmann R., Kranz H., Voss H., Holland R., Brandt P., Nyakatura G.,
RA Vezzi A., D'Angelo M., Pallavicini A., Toehnert T.-H., Nordsiek G.,
RA Vezzi A., D'Angelo M., Pallavicini A., Toehnert T.-H., Nordsiek G.,
RA Vezzi A., D'Angelo M., Pallavicini A., Toehnert T.-H., Nordsiek G.,
RA Reichelt J., Scharfe M., Schoen O., Bargues M., Terol J., Climent J.,
RA Ravarro P., Collado C., Perez-Perez A., Ottenwaelder B., Duchemin D.,
RA Ravarro P., Collado C., Perez-Perez A., Ottenwaelder B., Duchemin D.,
RA RA Mavarro P., Collado C., Perez-Perez A., Ottenwaelder B., Duchemin D.,
RA RA Mannhaut G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
RA Mannhaut G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
RA Mannhaut G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
RA Mannhaut G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
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SEQUENCE FROM N.A.
STRAIN-CY. LANDSBERG ERECTA;
STRAIN-CY. LANDSBERG ERECTA;
STRAIN-CY. LANDSBERG ERECTA;
STRAIN-CY. LANDSBERG ERECTA;
MIDDLINE-95036018; Pubmed-79448893;
MIDDLINE-95036018; Pubmed-79448893;
Okamoto H., Yano A., Shiraishi H., Okada K., Shimura Y.;
Okamoto H., Yano A., Shiraishi H., Okada K., Shimura Y.;
Okamoto H., Yano A., Shiraishi H., Okada K., Shimura Y.;
"Genetic complementation of a floral homeoric mutation, apetala3,

"Genetic complementation of a floral homeoric mutation, apetala3,"
"Genetic complementation of a floral homeoric mutation of a floral homeoric mutation of a floral homeoric mutation of a floral ho
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P35632; 039003;
01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence up
16-CCT-2001 (Rel. 40, Last annotation
Floral homeotic protein AP6TALA3.
AP3 OR AT3G543440 OR T1ZE18_30.
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Jack T., Brockman L.L., Meyerowitz E.M.; 
"The homeotic gene APETALA3 of Arabidopsis 
box and is expressed in petals and stamens. 
Cell 68:683-697(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (Mouse-ear cress).
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID~3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Purugganan M.D., Suddith J.I.; "Molecular population genetics of floral homeotic loci. Departures "Molecular population genetics of the APETALA3 and PISTILLATA genes of Arabidopsis thaliana."; Genetics 151:839-848(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=VARIOUS STRAINS;
MEDLINE-99126449; PubMed-9927474;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COLUMBIA;
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Pred. No. 2.1;
5; Mismatches
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RESULT 8
RMUC_PSEAE
ID RMUC_PSEAE
AC Q914U3;
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Best Local S
Matches 12
                                                                                                                                                                                                                                                                                  PRINTS; PRODAUA; PADS; 1.
SMART; SMO0432; MADS; 1.
PROSITE; PS00350; MADS_BOX_2; 1.
PROSITE; PS0066; MADS_BOX_2; 1.
Transcription regulation; DNA-binding; Ac
W Developmental protein.
W DAVIAN 3 57 MADS.
K-BOX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M86357; AAA33740.1; -.
EMBL; D21125; BAA04665.1; -.
EMBL; AF11579; AAD51888.1; -.
EMBL; AF115800; AAD51889.1; -.
EMBL; AF115800; AAD51891.1; -.
EMBL; AF115804; AAD51903.1; -.
EMBL; AF115811; AAD51903.1; -.
EMBL; AF115812; CAB81799.1; -.
EMBL; AL132971; CAB81799.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL, AF115804; AAD511
EMBL, AF115814; AAD511
EMBL, AF115814; AAD511
EMBL, AL132971; CAB81
PIR; A42095; A42095;
HSSP; P11746; IMNM.
TRANSFAC; T01776;
                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FUNCTION: TRANSCRIPTION FACTOR INVOLVED IN THE GENETIC CON FLOWER DEVELOPMENT.

1. SUBGUIT: FORMS AN HETERODIMER WITH PISTILLATA.

1. SUBCELLULAR LOCATION: NUCLEAR.

1. TISSUE SPECIFICITY: EXPRESSED IN PETALS AND STAMENS.

1. MISCELLANEOUS: MUTATIONS IN AP3 GAUSE TRANSFORMATION OF PE INTO SEPALS AND STAMINA INTO CARPELS.

1. SIMILARITY: BELONGS TO THE MADS DOMAIN FAMILY OF TRANSCRIPTIONS.

1. SIMILARITY: CONTAINS A PROBABLE DIMERIZATION DOMAIN FOUND SRF-TYPE TRANSCRIPTION FACTORS (K-BOX).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Rooney T., Rizzo M., Walts A., Utterback T., Fujii C.Y., Shea T.P Creasy T.H., Heas B., Malti R., Wu D., Peterson J., Van Aken S., Pal G., Militscher J., Sellers P., Gill J.E., Feldblyum T.V., Preuss D., Lin X., Nierman W.C., Salzberg S.L., White O., Venter Fraser C.M., Kaneko T., Nakamura Y., Sato S., Kato T., Asamizu E. Sasamoto S., Kimura T., Ideswaa K., Kawashina K., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Muraki A., Nakayama S., Nakazaki N., Shippo S., Takeuchi C., Wada T., Watanabe A., Yanada M., Yasuda M., Tabata S., "Sequence and analysis of chromosome 3 of the plant Arabidopsis "Sequence and analysis of chromosome 3 of the plant Arabidopsis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a licensee agreement (See http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002487; K-box.
InterPro; IPR002100; MADS-box.
Pfam; PF01486; K-box; 1.
Pfam; PF00319; SRF-TF; 1.
PRINTS; PR00404; MADSDOMAIN.
EMBER: SWOATS, MADSDOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  thaliana.";
Nature 408:820-822(2000).
-1- FUNCTION: TRANSCRIPTION FACTOR INVOLVED IN THE
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                                                                                                                                    QRYG----
                                                                                                     QRLGECLDELDIQELRRLEDEMENTFK 133
                                                                                                                                                                   l Similarity 44.4
12; Conservative
                                                                                                                                                                                                                                                        93
199
232 AA;
                   STANDARD;
                                                                                                                                    RELRRMSDEFEGSFK 25
                                                                                                                                                                                                                                                        165 K
199 A
27341 MW;
                                                                                                                                                                                    35.78;
                                                                                                                                                                   ; Score 51; DB ]; Pred. No. 1.7; 3; Mismatches
                                                                                                                                                                                                                                                        MADS.
K-BOX.
A -> R (IN REF. 2).
669070319F9857C3 (
                   PRT;
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                   453
                                                                                                                                                                                                                                                                                                                                        Activator;
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                                                                                                                                                                     4.
                                                                                                                                                                                                      Length 232
                                                                                                                                                                                                                                                         CRC64;
                                                                                                                                                                                                                                                                                                                                          Nuclear protein;
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                                                                                                                                                                     Gaps
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RESULT
ID R.R.
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Best Local s
Matches 10
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(C. STRAIN-ATCC 15692 / PAOI;

(C. STRAIN-ATCC 15692 / PAOI;

(C. STRAIN-ATCC 15692 / PAOI;

(C. STRAIN-ATCC 15692 / PubMed-10984043;

(C. A. Stover C.K.) Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P. A. Stover C.K., Pham X.-Q.T., Erwin A.L., O., Kowalik D.J., Lagrou A. Hickey M.J., Brihkman F.S.L., Hufnagie W.O., Kowalik D.J., Lagrou A. Hickey M.J., Pality T., Tolentino E., Westbrock-Wadman S., Yuan Y. A. Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M. Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M. Smith K.A., Spencer D.H., Mong G.K.-S., Wu Z., Paulsen I.T., A. Smith K.A., Spencer D.H., Hancock R.E. W., Lory S., Olson M.V.;

(C. Complete genome sequence of Pseudomonas aeruginosa PAOI, an roportunistic pathogen.";

(C. C. FUNCTION: Involved in DNA recombination (By similarity).

(C. C. SMILARITY: BELONGS TO THE RMUC FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE004535; AAG04420,1; -.
Interpro; IPR003798; DUF195.
Pfam; PF02646; DUF195; 1.
DNA recombination; Coiled Coil;
DOMAIN 16 201 COI
SEQUENCE 453 AA; 51539 MW; 1
                                                                                                                                                                                                                                                                                                                                                                                                   P22280;
01-AUG-1991 (Rel.
01-AUG-1991 (Rel.
30-MAY-2000 (Rel.
Ras-like protein
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01-MAR-2002
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RAS3_
                                                   SEQUENCE FROM N.A.
STRALM-ATCC 1216B;
MEDLINE-90161774: PubMed-1701021;
MEDLINE-90161774: PubMed-1701021;
Casale W.L., McConnell D.G., Wang S.-Y., Lee Y
"Expression of a gene family in the dimorphic
which exhibits striking similarity to human ra
Mol. Cell. Biol. 10:6654-6663(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                        Rhizomucor
Eukaryota;
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01-MAR-2002 (Rel.
DNA recombination
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Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                 NCBI_TaxID=4841;
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                                                                                                                                                                                                                                                                                                                        racemosus
Fungi; Zyg
   REGULATION:
ACTIVE FORM
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(Rel. 19, Last seq
(Rel. 39, Last ann
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. 41, Last sequence upd
. 41, Last annotation u
n protein rmuC homolog.
                                                                                                                                                                                                                                                                                                                        sus (Mucor circinelloides f. lusitanicus)
Zygomycota; Zygomycetes; Mucorales; Muco
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201 COILED COIL (POTENTIAL).
51539 MW; 1E7EA97E82EC5E4B CRC64;
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51 4
ALTERNATE BETWEEN AN INACTIVE FORM BOUND TO BOUND TO GTP. ACTIVATED BY A GUANINE
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                                                                                                                                                                                                                                                                                                                                                                                                                               sequence update) annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 49; DB:
Pred. No. 7.3;
4; Mismatches
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                                                                                                       Y.-J., Linz J
c fungus Mucor
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D.J., Lagrou M.,
n S., Yuan Y.,
                                                                                                                                                                                                                                                                                                                           Mucoraceae;
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Yuan Y.,
Lim R.M.,
                                                                                                                                  .E.;
                                                                                                             racemosus
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RESULT 10
6PGL_THEMA
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Best Local Similarity 62.6
Matches 10; Conservative
                                                                                                       STRAIN-MSB8 / DSM 3109;

MEDLINB-99287316; PubMed=10360571;

Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Nelson K.E., Clayton R.A., Gill S.R., Nelson W.C., Ketchum K.A.,

Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

Henderst A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,

"Evidence for lateral gene transfer between Archaea and Bacteria from genome sequence of Thermotoga maritima.";

Nature 399:32-339(1999).
                                                                                                                                                                                                                                                                                                                                                                  30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
6-phosphoglucomolactonase (EC 3.1.1.31) (6PGL).
PGL OR DEVB OR TM1154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M55177; AAA83379.1; -. PIR; C36365; C36365. HSSP; P01112; 1PLL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contents
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                                                                                                                                                                                                                                                                                                                     Thermotoga maritima.

Bacteria; Thermotogales; Thermotoga
NCBI_TaxID=2336;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ._
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6PGL
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SMART; SM00173; RAS; 1
                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR003577; Ras.
InterPro; IPR001806; Ras_trnsfrmng.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    168 REIRRMNKEQEGRSKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEVELOPMENTAL STAGE: IN SPORULATING MYCELIUM AND MUCH LESS GERMLING AND YEAST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUCLEOTIDE-EXCHANGE FACTOR (GEF) AND INACTIVATED BY A GTPASE-ACTIVATING PROTEIN (GAP).
SUBCELLULAR LOCATION: PLASMA MEMBRANE.
phospho-D-gluconate.

PATHWAY: SECOND STEP IN PENTOSE PHOSPHATE PATHWAY.

SIMILARITY: BELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6-PHOSPHATE
ISOMERASE FAMILY. 6-PHOSPHOGLUCONOLACTONASE SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: BELONGS TO THE SMALL GTPASE SUPERFAMILY. RAS FAMILY.
                                                               CATALYTIC ACTIVITY: 6-phospho-D-glucono-1,5-lactone +
                                                                                             FUNCTION: HYDROLYSIS OF
                                                                                 PHOSPHOGLUCONATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _THEMA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PF00071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205 AA;
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63
122
38
202
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16 23 GTP (BY SIMILARITY).

63 67 GTP (BY SIMILARITY).

122 125 GTP (BY SIMILARITY).

38 46 EFFECTOR REGION (PROBABLE).

702 202 PARMESYL (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ras; 1
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                                                                                               6 - PHOSPHOGLUCONOLACTONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ņ
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Pred. No.
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4.3;
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BINDING SEQUENCE

196 519 AA ;

196 57412

MΣ;

THREONINE SYNTHASE.
PYRIDOXAL PHOSPHATE (BY SIMILARITY).
; 114C0979CD231464 CRC64;

CHLOROPLAST (BY SIMILARITY)

Chloroplast; Transit peptide.
TRANSIT 1 40
CHAIN 41 519

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THRESULF
THR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                             Pfam; PF
PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Casazza P., Kaiser S., Willmitze "Isolation and characterization from Solanum tuberosum."; Submitted (AUG-1998) to the EMBI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               O9MT28:

01-MAR-2002 (Rel. 41, Created)

01-MAR-2002 (Rel. 41, Last sequence update)

01-MAR-2002 (Rel. 41, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THRC
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                                                                                                                                                                                 PROSITE; PS00165; DEHYDRATASE_SER_THR; 1.
Threonine biosynthesis; Lyase; Pyridoxal phosphate; Allosteric enzyme;
                                                                                                                                                                                                                                                                                                                                          EMBL; AF082894; AAF74984.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- PATHWAY: Threonine biosynthesis; last step.
-!- SUBUNIT: Homodimer (By similarity).
-!- SUBCELLULAR LOCATION: Chloroplast (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOLTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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                                                                                                                                                                                                                         Pro; IPR001926; B6_enzyme_beta.
PF00291; PALP; 1.
TE; PS00165; DEHYDRATASE_SER_THR;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       27
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g threonine
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RX MEDLINE-2003488; Pubbed-10617198;
RA MAYER K.F.X., Schweller C., Wambutt R., Murphy G., Volckaert G.,
RA Mayer K.F.X., Schweller C., Wambutt R., Murphy G., Volckaert G.,
RA Mayer K.F.X., Schweller C., Wambutt R., Murphy G., Volckaert G.,
RA Weichselgartner M., de Simone V., Obermaler B., Mache R., Mueller M.,
RA Weichselgartner M., de Simone V., Obermaler B., Mache R., Mueller M.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Kreis M., Delseny M., Pulgdomenech P., Watson M., Schmidtheini T.,
RA Vos P., Hoheisel J., Zimmermann W., Wedler H., Ridley P.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Van der Schweren J., Grymonprez B., Chwang Y.-J., Vandenbussche F.,
RA Weitzenegger T., Bothe G., Ramsperger U., Hilbert H., Braun M.,
RA Wilzenegger T., Bothe G., Ramsperger U., Hilbert H., Braun M.,
RA Mooljman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mooljman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Moolyman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Petter S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H.,
RA Petter E., Brandt R., Brayer M., Lennard N., Wclay K.,
RA Pettett A., Rajandream M.-A., Lyne M., Benes V., Rechmann S.,
RA Pettett A., Rajandream M.-A., Lyne M., Benes V., Rechmann S.,
RA Pose S., de Haan M., Maarse A.C., Schaefer M., Mueller-Neer S.,
RA Meumann S., Argiriou A., Vitale D., Liguori R., Piravandi E.,
RA Massenet O., Oulgley F., Clabauid G., Muendlein A., Felber R.,
RA Glabel C., Fuchs M., Fartmann B., Granderath K., Dauner D., Herzl A.,
RA Massenet O., Oulgley F., Clabauid G., Muendlein A., Felber R.,
RA Glaben F., Weber N., Vandenbol M., Bargues M., Terol J., Torres A.,
RA Glaben F., Schwarz S., Scholler P., Heber S., Francs P., Bielke C.,
RA Perter P., Bentley D., Lencke K., Hang E., Spiegel L.,
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnollophyta; eudicotytedons; core eudicots; Rosid

eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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MEDLINE=99418329; PubMed=10490396;
Bartlem D., Tamaki Y., Naito S.;
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01-MAR-2002 (Rel. 41, Last sequence update)
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[2]
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"Genomic nucleotide sequence of the Arabidopsis threonine
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EMBL; AL050352; CAB43659.1; -.
EMBL; AL161575; CAB79742.1; -.
EMBL; L41666; AAB04607.1; -.
PDB; 1E5X; 02-AUG-01.
InterPro; IPB001926; PALP.
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                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.lsb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- PATHWAY: Threonine biosynthesis; last step.
-!- SUBUNIT: Homodimer.
-!- SUBCELLULAR LOCATION: Chloroplast.
-!- SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nelson J., Spieth J., Ryan E., Andrews S., Geisel C., Layman D., Du H., Ali J., Berghoff A., Jones K., Drone K., Cotton M., Joshu C., Antonoiu B., Zidanic M., Strong C., Sun H., Lamar B., Yordan C., Ma P., Zhong J., Preston R., Vil D., Shekher M., Matero A., Shah R., Swaby I.K., O'Shaughnessy A., Rodriguez M., Hoffman J., Till S., Granat S., Shohdy N., Hasegawa A., Hameed A., Lodhi M., Johnson A., Chen E., Marra M., Martienssen R., McCombie W.R.;
Sequence and analysis of chromosome 4 of the plant Arabidopsis
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                                                                                                                                           Chloroplast; Transit TRANSIT 1 '
                                                                                                                                                                                                                                                                                                                                                                                    between the Swiss Institute of Bioinf
the European Bioinformatics Institute
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phosphate.
-!- COFACTOR: Pyridoxal phosphate
                                                                                                                                                                        Threonine
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                                                                                                                                                                                                     Pfam; PF00291; PALP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=11344332;
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Characterization of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PubMed=8706836;
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                                                                                                      PS00165; DEHYDRATASE_SER_THR; 1.

re biosynthesis; Lyase; Pyridoxal phosphate;
ast; Transit peptide; 3D-structure.
1 40 CHLOROPLAST;
41 526 THREONINE SYNTHASE.
203 203 PYRIDOXAL PHOSPHATE.
                                                                            526 AA;
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                                                                             57776
                 33.6%;
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an Arabidopsis thaliana cDNA encoding an
-sensitive threonine synthase. Threonine synthase
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   6;
                Score
Pred.
                                                                                          THREONINE SYNTHASE.

PYRIDOXAL PHOSPHATE.

A -> L (IN REF. 3).
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e from Arabidopsis thaliana.";
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orni, 33
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orni, 1994 (Rel. 29, Last sequence upda
orni, 1994 (Rel. 41, Last annotation upo
e Antho-Ramide neuropeptides precursor.
Galliactis parasitica (Sea anemone).
Eukaryota; Metazoa; Cnidaria; Anthor-
NCBI Tarri,
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Darmer D., Schmutzler C., Diekhoff D., Grimmelikhuijzen C.J.P.;

Primary structure of the precursor for the sea anemone neuropeptide antho-RFamide (<Glu-Gly-Arg-Phe-NH2).";

Proc. Natl. Acad. Sci. U.S.A. 88:2555-2559(1991).

Proc. Natl. Acad. Sci. U.S.A. 88:2555-2559(1991).

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PIR; A39172; A39172.
InterPro; IPR002544; FARP.
Pfam; PF01581; FARP; 15.
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TISSUE-Peripheral blood, and Spleen;

MEDLINE-98094360; PubMed-9431630;

MEDLINE-98094360; PubMed-9431630;

A COTOMOT L., Strasser A., O'Reilly L.A., Hausmann G., Adams J.M.,

COTY S., Huang D.C.S.;

"Bim: a novel member of the Bcl-2 family that promotes apoptosis.";

LEMBO J. 17:384-395(1998);

C -!- FUNCTION: INDUCES APOPTOSIS. ISOFORM BIML IS MORE POTENT THAN

ISOFORM BIMEL.

C -!- SUBUNIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2;

PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BFL-1, AND BHRP-1. DOES

NOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BOK,

BAX OR BAK (BY SIMILARITY).

C -!- SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES

C (BY SIMILARITY).

C -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; BİMEL (SHOWN HERE) AND

BIML; ARE PRODUCED BY ALTERNATIVE SPLICING.

C - LOMANN: THE BH3 DOMANN IS REQUIRED FOR BCL-2 BINDING AND
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                    Apoptosís;
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148 162 BH3.
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1. BIOL. Chem. 267:22534-22541(1992).
1. FUNCTION: NOT KNOWN BUT IT COULD ACT AS A TRANSMITTER AT NEUROMUSCULAR SYNAPSES.
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16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Antho-RFamide neuropeptides type 2 precursor.
Anthopleurs elegantissima (Sea anemone).
Eukaryota, Metazoa; Conidaria; Anthozoa; Zoantharia; Actiniaria;
Nynantheae; Actiniidae; Anthopleura.
NCBI_TaxID-6110;
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Badcock K., Basham D., Brown D., Chillingworth T., Connor R.,

Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S.,

A Davies R., Jagels K., Krogh A., McLean J., Moule S., Murphy L.,

A Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J.,

A COliver S., Seeger K., Skelton S., Squares S.,

A Sulston J.E., Taylor K., Whitehead S., Barrell B.G.;

"Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";

Nature 393:537-544(1998).

Nature 393:537-544(1998).

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RIBOSOMAL MATURASE (FRAGMENT).
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MYCObacterium tuberculosis.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
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NCBI_TaxID=49154;
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Pfam: PF02371; Transposase_20; 1.

Hypothetical protein: Complete proteome.

SEQUENCE 223 AA; 24132 MW; 70456750017FEF37 CRC64;
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Submitted (JUN-1996) to the
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RIBOSOMAL MATURASE.
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062973;
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  SEQUENCE FROM N.A. Kurashige Y., Mine Yukawa T.;
                                                  Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; Ericales; Ericaceae; Rhododendron.
                                                                                  Chloroplast.
                                                                                          Rhododendron albiflorum.
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SEQUENCE
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J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012730; BAA25851.1;
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Kurashige Y., Mine M., Kobayashi N.,
Yukawa T.;
                                                                                                                                                                                                                                                                                                                                                                                               "Investigation of Sectional Relationships in the Genus Rhododendron(Ericaceae) based on matK Sequences.";
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                                        NCBI_TaxID=49161;
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InterPro; IPR002866; MatK_N.
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01-AUG-1998 (TrEMBLTEL). C
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EMBL; AB012731; BAA25852.1; -.
InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002666; Matk N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01844; Matk_N; 1.
Chloroplast.
Chloroplast.
SEQUENCE 506 AA; 60491 MW; 3CCC930385B12DBC CRC64;
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InterPro; IPR002866; MatK_N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
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Chloroplast.
Eukaryota; Viridiplantae;
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J. Jpn. Bot. 0:0-0(1998).
EMBL: AB012732; BAA25853.1; -
                                                Rhododendron luteum
                                                                          MATK.
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Kurashige Y., Mine M.,
Yukawa T.;
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     Tracheophyta;
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Best Local Similarity
Matches 12; Conser
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Best Local Similarity 37.5
Matches 12; Conservative
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062978;
01-AUG-1998 (TIEMBLIFE). 0
01-AUG-1998 (TIEMBLIFE). 0
01-DEC-2001 (TIEMBLIFE). 1
062980;
062980;
01-AUG-1998
                                                                                                                                                             Chloroplast,
Chloroplast,
506 AA;
                                                                                                                                                                                    "Investigation of Sectional Relationships in the Rhododendron(Ericaceae) based on matk Sequences. J. Jpn. Bot. 0:0-0(1998).
EMBL; AB012735; BAA25856.1; ... InterPro; IPR000442; Intron_maturse2. InterPro; IPR002866; Matk_N.
pfam; PF01348; Intron_maturas2; 1.
pfam; PF01824; Matk_N: 1.
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InterPro; IPR002866; MatK.N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
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                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
Kurashige Y., Mine M.,
Yukawa T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rhododendron(Ericaceae) based J. Jpn. Bot. 0:0-0(1998). EMBL; AB012734; BAA25855.1; -.
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Kurashige Y., Mine M.,
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                                                                                            1 KNLWAA-----
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OHENCE 506 AA; 60359 MW;
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                                                                     RPVWAALSDSDIIERFGRIYRNLSHYYSGSLK 422
                                                                                                                                                                                                                                                                                                                                                                                        MATURASE
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ilarity 37.5%;
Conservative
(TrEMBLrel. 07,
                    PRELIMINARY;
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07,
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Pred. No. 20;
5; Mismatches
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Pred. No. 20;
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Best Local S
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062981;
01-AUG-1998
01-AUG-1998
01-DEC-2001
                                                                                                Chloroplast.
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                                                                                                                                                                                                                                                                                  Chloroplast.
Chloroplast.
Fickaryota; Viridiplantae;
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EMBL; AB012737; BAA25858.1; --
InterPro: IPR000442; Intron_maturse2.
InterPro: IPR000866; MatK_N.

Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
                                                                                                                     InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK_N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
                                                                                                                                                                  Rhododendron(Ericaceae) based J. Jpn. Bot. 0:0-0(1998). EMBL; AB012738; BAA25859.1; -.
                                                                                                                                                                                              SEQUENCE FROM N.A.

Kurashige Y., Mine M., Kobayashi N., Handa T., Takayana Yukawa T.;

"Investigation of Sectional Relationships in the Genus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chloroplast, SEQUENCE 506 AA;
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;

Asteridae; Ericales; Ericaceae; Rhododendron.
                                                                                                                                                                                                                                                         Asteridae; Ericales;
NCBI_TaxID=75576;
                                                                                                                                                                                                                                                                                                               Rhododendron pentaphyllum.
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Kurashige Y., Mine
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391
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                                                      Local
                     1 KNLWAA----
                                                                 Match
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KPVWAALSDSDIIERFGRIYRNLSHYYSGSLK
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                                           l Similarity
12; Conserv
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B (TrEMBLIEL. )
1 (TrEMBLIEL.
                                            Conservative
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                     -QRYGRELRRMSDEFEGSFK 25
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19,
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5; Mismatches
                                        Score 52.5; I
Pred. No. 20;
5; Mismatches
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Best Local
       Rhododendron(Ericaceae) based on matk s J. Jpn. Bot. 0:0-0(1998).
EMBL; BD012740; BD025861.1; -.
InterPro; IPR000442; Intron_maturse2.
InterPro; IPR002866; Matk_N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01348; Intron_maturas2; 1.
Chloroplast.
Chloroplast.
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O62982;
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O1-AUG-1998 (Tremblrel. 0
O1-DEC-2001 (Tremblrel. 1
RIBOSOMAL MATURASE.
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01-AUG-1998 (TrEMBLrel. 0
01-AUG-1998 (TrEMBLrel. 0
01-DEC-2001 (TrEMBLrel. 1
RIBOSOMAL MATURASE.
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                                                                                                                                                                              Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; Ericales; Ericaceae; Rhododendron.
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J. Jpn. Bot. 0:0-0(1998),
EMBL; AB012739; BAA25860.1;
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                                                                                                                             SEQUENCE FROM N.A.
Kurashige Y., Mine M., Kobayashi N., Handa T., Takayanagi K.,
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Pfam; PF01824; MatK_N;
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Yukawa T.;
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                                                                                           "Investigation of Sectional Relationships in the Genus Rhododendron(Ericaceae) based on matK Sequences.";
                                                                                                                       Yukawa T.;
                                                                                                                                                                  NCBI_TaxID-75578;
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InterPro; IPR002866; MatK_N.
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506
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ΑA,
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60393 MW;
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Pred. No. 20;
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DAAB47A759CFFC46 CRC64;
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Query Match

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Search completed: September
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Best Local
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Chloroplast.

Eukaryota; Viridiplantae; Streptophyta; Embryophyta;

Spermarophyta; Magnoliophyta; eudicotyledons; core eu
Asteridae; Ericales; Ericaceae; Rhododendron.

MCBI_TaxID-49622;
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01-AUG-1998 (TrEMBLrel. 07,
01-AUG-1998 (TrEMBLrel. 07,
01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                 InterPro: IPR000442; Intron_maturse2.
InterPro; IPR002866; MatK.N.
Pfam; PF01348; Intron_maturas2; 1.
Pfam; PF01824; MatK_N; 1.
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                                                                                                                                                              SEQUENCE
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                                                                                                                                                                                                                                                                                       Kurashige Y.,
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                                                         391 KPVWAALSDSDIIERFGRIYRNLSHYYSGSLK 422
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5; Mismatches
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September 20, 2002, 10:28:52; Search time 228.86 Seconds (without alignments) 12.619 Million cell updates/sec
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Title: Perfect score: Sequence: US-09-544-664-1 138 NLWAAQRYGRELRRMSDEFEGSFKGL 26

Scoring table: Gapop 10.0 , Gapext 0.5 BLOSUM62

Total number Searched: of hits satisfying chosen parameters: 747574 seqs, 111073796 residues

747574

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Minimum DB Maximum DB seq length: 0 length: 2000000000

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Listing first 45 summaries

Database ٠.

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

100.0 204 19 AAW61318	100.0 204 19 AAW61317	100.0 204 19 AAW61316	100.0 204 19 AAW61315	100.0 204 17 AAR95168	! AAB70370	100.0 28 21 AAB37055	100.0 27 21 AAB37056	100.0 27 21 AAB37003	100.0 26 21 AAB37002	100.0 26 21 AAB37001	Result Query NO. Score Watch Length DB ID Description
Mutant BCL-XL/BCL,	ntant BCL-XL/BCL-	itant BCL-XL/BCL-	urine BCL-XL/BCL-	1-x(L)/bc1-2 ass	orter murine BAD	:12 polypeptide B	:12 polypeptide B	:12 polypegtide B	:12 polypeptide B	Bc12 polypeptide B	escription

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is thal		21	242	7	51	44
Arabidopsis thalia		21	241	7	51	43
Arabidopsis thalia		21	236	7.	51	42
idopsis thal		21	232	7	51	41
Arabidopsis thalia		21	232	7.	51	40
tha		21	186	7	51	39
is thal		21	186	7.	51	38
Arabidopsis thalia		21	181	7.	51	37
is thal		21	171	7.	51	36
is the		21	125	7.	51	35
BAD BH3 domain reg		22	20	'n	72	34
3H3 domain		22	18		72	3
Bcl2 polypeptide B		21	16	2	73	32
Human BAD BH3 doma		20	16	2	73	31
Bcl2 polypeptide B		21	16	0	84	30
Mouse BAD BH3 doma		20	16	ς.	84	29
bcl-x(L)/bcl-2 ass		17	16	2	86	28
BAD BH3 consensus		22	26	7.	93	27
Mammalian Bad Bcl-		21	26	7.	93	26
BCL-XL,		19	59	ω.	102	25
BCL-XL,		19	59	w	102	24
Mutant BCL-XL/BCL-		19	59	•	102	23
nt BCL-XL/		19	59	ω	102	22
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acid		22	168	2	114	20
Bad		22	168	N	114	19
BAD II		22	168	Ν	114	18
Human cell prolife		21	168	Ņ	114	17
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BBC6 protein for r		18	166	N	114	15
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Longer murine BAD	AAB70369	22	204	0	138	13
Murine BAD protein		19	204	00.	138	12

#### ALIGNMENTS

RESULT AAB37001 AAB37001 standard; peptide; ب 26

A

AAB37001;

28-FEB-2001 (first entry)

Bcl2 polypeptide BH3 domain peptide #1

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

Homo sapiens.

WO200059526-A1.

12-OCT-2000.

06-APR-2000; 2000WO-US09352

07-APR-1999; 99US-0128202.

(UYJE-) UNIV JEFFERSON THOMAS

Huang Z, Wang J, Zhang Z, Shan S, Ę 2;

WPI; 2000-679325/66.

New peptide conjugates for modulating apoptosis or for inhibiting æ

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The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COOH CC or two double bonds, cyclobutyl, cyclopentyl, cyclobaxyl optionally containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclobaxyl optionally composubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AB37001-B37058 represent examples cof the peptide portion of the conjugate. The peptide conjugate is cof the BH3 domain of the cell death agonist BAC The peptide conjugate is cuseful for modulating apoptosis in the cells of a subject, or for corresponding to amount of the cells. It is also useful for inhibiting BCl-2 subject with a cancer characterized by cancer cells that cancer includes prostate, colorectal, gastric, consensal lung, renal or thyroid cancers, neuroblastoma, melanoma, or acute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is sation or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is sation or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating a cute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is sation or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating a cute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating disorders, acquired by cancer characterized by cancer characterized by concersed apoptosis, e.g. neurodegenerative disorders, acquired considered in the considered considered considered considered considered considered considered considered considered considered considered considered
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                                                                             (UYJE-) UNIV JEFFERSON THOMAS
                                                                                                                                                           07-APR-1999;
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neurodegenerative disorders, stroke, or cancer -
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The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH.

CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COOH CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides ANA37001-B37058 represent examples of the peptide portion of the conjugate. The peptides represent analogues CC of the Peptide portion of the conjugate. The peptide conjugate is CC susping B cell lymphoma/lukemia 2 (Bc-2)-mediated blockage of cxeversing B cell lymphoma/lukemia 2 (Bc-2)-mediated blockage of cxeversing B cell lymphoma/lukemia 2 (Bc-2)-mediated blockage of cunction. In particular, the peptide conjugate is useful for treating a caute or chronic lymphocytic and non-lymphocytic lukemia. The peptide colorectal, gastric, con-small lung, renal or thycoid cancers, neuroblastoma, melanoma, or caute or chronic lymphocytic and non-lymphocytic lukemia. The peptide conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired configure is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired configure is also useful for cancer characterized by cancer calls that cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer cancer 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              for modulating apoptosis or for inhibiting 2 (Bcl-2) function, especially useful for tive disorders, stroke, or cancer
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Matches 26
ch 100.0%; l Similarity 100.0%; 26; Conservative (
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28-FEB-2001
                     AAB37003;
                                      AAB37003 standard;
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(first entry)
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Bcl2

polypeptide BH3 domain peptide #3.

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction. 06-APR-2000; Homo sapiens. 2000WO-US09352 99US-0128202

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RESULT
AAB37056
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AC AAB3
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CC (R-X)n peptide where n = 1-10; X = C=0, when the R-X group is attached CC (R-X)n peptide where n = 1-10; X = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC when the R-X group is attached to the C-terminus of the peptide where CC or two double bonds, cycloburyl, cyclopentyl, cycloberyl potionally GC monosubstituted with a 1-5C straight or branched chain at hyl group or benzyl. The peptides where CC of the peptide with a 1-5C straight or branched chain alkyl group. CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group. CC of the peptide portion of the conjugate. The peptides represent examples CC of a bcl 2 superfamily polypeptide corresponding to amino acids 72-97 of CC the BH3 domain of the cell death agonist Bad. The peptide conjugate is cuseful for modulating apoptosis in the cells of a subject, or for reversing B cell lymphomaylesthemia 2 (Bcl-2)-mediated blockage of apoptosis in cancer cells. It is also useful for treating a cc subject afflicted with a cancer characterized by cancer cells that cancer or bronic lymphocytic and non-lymphocytic leukemia. The peptide correctal, gastric, con-small lung, renal or thyrold cancers, neuroblastoma, melanoma, or conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI;
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27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
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Query Match
Best Local S
Matches 26
2h 100.0%; Score 138; DB 21; Similarity 100.0%; Pred. No. 1.4e-14; 26; Conservative 0; Mismatches 0;
                                                                    Length
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0

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RESULT
AABS7057
AXX AAB:
XX AAB:
XX BC1:
XX BC1:
XX Cyte
XW Carr
XW Carr
XW Coit
XW Coit
XW Str:
XW Str:
XX MStr:
                                                                  Bcl2
                                                                               28-FEB-2001 (first entry)
                                                                                               AAB37055;
                                                                                                                            G
                                                                 polypeptide
                                                                                                             standard;
                                                                 BH3 domain peptide
                                                                                                             peptide;
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Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bc1-2 superfamily; Bid domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

12-OCT-2000 WO200059526-A1

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RESULT
AAB70
IO AAB70
XX AAB7
XX AAB7
XX AAB7
XX Shor
XX Bcl-
XX Lnmn
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CC (R-X)n-peptide where n = 1-10; x = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC when the R-X group is attached to the C-terminus of the peptide where CC when the R-X group is attached to the C-terminus of the peptide, where the side chain functional group is COOH CC or two double bonds, cycloburyl cyclopenryl, cycloberyl optionally correspond to the cyclopenryl cyclopenryl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides ABB37001-B37058 represent analogues CC of the peptide portion of the conjugate. The peptides represent examples CC of a Bally group, or benzyl. The peptides ABB37001-B37058 represent analogues CC of the BH3 domain of the cell death agonist Bed. The peptide conjugate is conseculating apoptosis in the cells of a subject, or for CC useful for modulating apoptosis in the cells of a subject, or for CC useful for modulating apoptosis in the cells of a subject, or for CC useful for matricular, the peptides conjugate is useful for treating a CC subject afflicted with a cancer characterized by cancer cells that CC express Bc1-2. The cancer includes prostate, colorectal, gastric, con small lung, renal or thyrold cancers, neuroblastoma melanoma, or CC conjugate is also useful for treating a coute or chronic lymphoytic and non-lymphoytic leukemia. The peptide conjugate is equired increased apoptosis, e.g. neurodagenerative disorders, acquired conjugate is an outperfied by cancer characterized by cancer calls that cancer on a new constant in the peptide conjugate is acquired conjugate is a second apoptosis, e.g. neurodagenerative disorders, acquired conjugate is acquired in munodeficiency syndrome (AIDS), stroke or myocardial infarction.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 26; Conserv
Bc1-XL/Bc1-2 associated cell death regulator: BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antisischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiviral; and healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer;
                                                                                                                                                                                                                                            02-MAY-2001
                                                                                                                                                                                                                                                                                                             AAB70370;
                                                                                                                                                                                                                                                                                                                                                                        AAB70370
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (-aryu)
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                                                                                                                                                                                                                                                                                                                                                                           standard;
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illarity 100.
Conservative
                                                                                                                                                                                                                                    (first entry)
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                                                                                                                                                                          mutant amino
                                                                                                                                                                                                                                                                                                                                                                           protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .08;
                                                                                                                                                                                                                                                                                                                                                                           162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 138; [
Pred. No. 1.5
); Mismatches
                                                                                                                                                                      acid sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 21;
                                                                                                                                                                      SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
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lumunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
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WO200110888-A1

15-FEB-2001

30-MAY-2000; 2000WO-US11864

28-MAY-1999; 99US-0136783

(APOP-) APOPTOSIS TECHNOLOGY INC

Zhou

WPI; 2001-138734/14.

apoptosis, Ser113 -New mutant Bc1-XL/Bc1-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seriss or

Claim 7; Page 148-149; 157pp; English

The present invention describes an isolated or synthetic polypeptide (1) comprising a less than full length amilo acid sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of a mutant CC fell sequence of this bit of a fell sequence of antiarthritic, antiinflammatory and immunosuppressive activities, and compared to the used as an apoptosis inducer or inhibitor. BAD polypeptides and CC can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC for activity that promote cell survival or apoptosis. Other uses include CC inductory or inhibiting apoptosis in a cell. Candidate compounds of inhibiting apoptosis in a cell. Candidate compounds of immunodeficiency diseases, neurodegenerative diseases, ischaemic cell ceath, reperfusion cell death, wound healing, cancer, vital infections, lymphoproliferative conditions, arthritis, infertility, inflammation and CC autoinmune diseases. The present sequence represents a specifically collaimed shorter mutine BAD mutant amino acid sequence from the present CC invention.

Sequence 162 Ş

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9
               QY
                                    Matches
                                           Query Match
Best Local
  98
                 1 NLWAAQRYGRELRRMSDEFEGSFKGL 26
nlwaaqrygrelrrmsdefegsfkgl 123
                                   100.0%;
Similarity 100.0%;
26; Conservative 0
                                   0;
                                  Score 138; DB 22;
Pred. No. 1.1e-13;
                                                  Length
                                   Indels
                                                   162;
                                   0;
                                   Gaps
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## 7

AAR95168 standard; Protein;

(first entry)

bcl-x(L)/bcl-2 associated death promoter protein.

RESULT AAR9516 ID AAR9 XX AAR9 AC AAR9 XX 06-J XX 06-J XX Epit KW Poly Epitope; murine; bcl-x(L)/bcl-2 associated death promoter; Bad. s polypeptide; bcl-x; cell death; resultate; BHI; BHZ; apoptotic cel cytokine deprivation; IL-3 dependent cell line; immunodeficiency;

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This sequence represents the murine bcl-x(L)/bcl-2 associated death cc promoter (Bad) gene. Bad is a 22.1 kD protein which interacts with c bcl-2 and bcl-x proteins and regulates cell death. It has homology ct to the bcl-2-related family clustered in the BH1 and BH2 domain. Bad casays and in vivo in mammalian cells. Overexpressed Bad counters the cc death inhibitory activity of bcl-x(L), but is much less effective at countering the death inhibitory activity of bcl-x(L). Bad expression can accelerate apoptotic cell death induced by cytokine deprivation in an accelerate apoptotic cell line expressing bcl-x(L), and its also counters, the cdeath repressor activity of bcl-x(L). Bad competes with Bax for binding to bcl-x(L). Bad may be used to identify agents which inhibit its binding to bcl-2 or bcl-x(L) to form heterodimers. Such agents may be used to treat neurodegenerative diseases, immunodeficiency diseases, cc e.g. AIDS, senescence or ischaemia.
                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Polynucleotide encoding bcl-x(L)/bcl-2 associated death promoter useful to treat neoplasia and apoptosis and to identify eigents inhibiting its binding to bcl-2 or bcl-x(L) to form heteromultimers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-OCT-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               31-OCT-1995;
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             Murine BCL-XL/BCL-2 associated cell death regulator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 3; Fig 1; 130pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UNIW ) UNIV WASHINGTON
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                                      07-OCT-1998 (first entry)
                                                                  AAW61315;
                                                                                           AAW61315 standard; Protein; 204
                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                            1 NLWAAQRYGRELRRMSDEFEGSFKGL 26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1996-251465/25
DB; AAT29479.
                                                                                                                                                                                                                      26;
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Similarity 100.0%;
26; Conservative 0
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38..61
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147..149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "PEST sequence'
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                                                                                                                                                                                                                      Score 138; DB 17; pred. No. 1.4e-13; Mismatches 0;
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                                                                                                                      RESULT
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Murine; mouse; BCL-XL/BCL-2 associated cell death regulator;
                                                      07-OCT-1998
                                                                                                                                                                                                                                                                                                     Sequence
                            Mutant BCL-XL/BCL-2 associated cell death regulator #1
                                                                                 AAW61316;
                                                                                                            AAW61316 standard;
                                                                                                                                                                           9
                                                                                                                                                                                                                                ch 100.0%; Score 138; DB 19; Il Similarity 100.0%; Pred. No. 1.4e-13; 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                        204
                                                      (first entry)
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ĀĀ;

Indels Length 204;

0;

Gaps

0;

Protein;

204 AΑ

BAD protein;

XXXXXXX

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RESULT

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CC death regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence is the murine BAD protein. Also described are: (1) CC fragments of mutant BAD protein also decrease cell visibility; (2) CC fusion proteins of mutant BAD protein also decrease cell visibility; (2) CC fusion proteins of mutant BAD with a heterologous polypeptide that CC or prevent diseases associated with reduced approteins are used to treat CC or prevent diseases associated with reduced approteins, e.g. cancer, viral infection, lymphoproliferation, arthritis, infertility, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, e.g. cancer, CC unimantion and autoimmune disease. Polypnorleotide sequences encoding CC unimation BAD proteins can be used similarly by gene therapy or to produce transgenic enimals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serime-phosphatase. Inhibitors are potentially useful cell death. The apoptotis status of cells is aging or ischaemic cell death. The apoptotis status of cells is certained by measuring relative amounts of phosphorylated and non-phosphorylated on the specified Ser, forming a product that does not phosphorylated on the specified Ser, forming a product that does not phosphorylated on the specified Ser, forming a product that does not phosphorylated contents with BCL-2 or BCL-XL but instead binds to 14-3-3 family CC groteins in the cytosol, thus promoting cell survival. The mutants with CC ser substituted cannot bind 14-3-3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 1; Fig 10; 95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New mutant BAD polypeptide with phosphorylatable useful for, e.g. treating reduced apoptosis such viral infection
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N-PSDB; AAV27833.
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RESULT
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                                                                                                                                                                                                                                                                                                                                   Ouery Match 100.0%; Score 138; DB 19; Best Local Similarity 100.0%; Pred. No. 1.4e-13; Matches 26; Conservative 0; Mismatches 0;
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Synthetic.
                      Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD
                                                         Mutant BCL-XL/BCL-2 associated cell death regulator #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New mutant BAD polypoptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                                                                                 07-OCT-1998
                                                                                                                                    AAW61317;
                                                                                                                                                                        AAW61317 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-261422/23.
N-PSDB; AAV27834.
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                                                                                                                                                                                                                                                                                                                                                                                                                                204 AA;
                                                                                               (first entry)
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                                                                                                                                                                        Protein;
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D protein;
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The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell clearly regulator) proteins, having an amino acid other than Ser at CD position 112 and/or 115. relative to the murine BAD 204 as sequence. The CD position 12 and/or 135. relative to the murine BAD 204 as sequence. The CD present sequence represents a mutant BAD protein. Also described are: (1) CC fragments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of matant BAD with a heterologous polypeptide that the proteins are used to treat cor prevent diseases associated with reduced apoptosis, e.g. cancer, (1) CC viral infection, lymphoproliferation, arthritis, infertility, contains and autoimmune disease. Polynucleotide sequences encoding cutant BAD proteins can be used similarly by gene therapy or to produce transpends on independent and autoimmune diseases models or in drug screening. BAD cc and inhibitors of serine-phosphatase. Inhibitors are potentially useful in treatment of excessive apoptosis used as atos, neurodegeneration, and inhibitors of excessive apoptosis used as atos, neurodegeneration, can determined by measuring relative amounts of phosphorylated and non-posphatase with BCL-2 or BCL-XL but instead bad which can become composition and the Specified Ser, forming a product that does not beterodimerise with BCL-2 or BCL-XL but instead binds to 14-3-3 family CC proteins in the cytosol, thus promoting cell survival. The mutants with acc ser substituted cannot bind 14-3-3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New mutant BAD polypeptide with phosphorylatable serine useful for, e.g. treating reduced apoptosis such as in c viral infection
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Synthetic
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Sequence 204 AA;

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RESULT 1
                                                                        Query Match
Best Local S
Matches 26
                                 11
                                                                      ch 100.0%; Score 138; DB 19;
1 Similarity 100.0%; Pred. No. 1.4e-13;
26; Conservative 0; Mismatches 0;
                                                                         Indels
                                                                                         Length
                                                                                           204;
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Murine; mouse; BCL-XL/BCL-2 associated cell death regulator;

BAD

protein

Mutant BCL-XL/BCL-2 associated cell death regulator #3

07-OCT-1998

(first

entry)

AAW61318 standard;

Protein;

EXSXEX BX BX B

Вb 8

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AAW58832
ID AAW588
XX
AC AAW588
XX
AC AAW588
XX
DT 23-JUL
XX
DE Murine
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KW BAD pr
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                                                                                                                                                                                                                                                                                           CC death regulator) proteins, having an amino acid other than Ser at cost of acid regulator) proteins, having an amino acid other than Ser at cost into 112 and/or 136, relative to the murine BAD 204 as sequence. The CC position into and/or 136, relative to the murine BAD 204 as sequence. The createst and the cost of the murine BAD 204 as sequence. The createst intracellular delivery. Mutant BAD protein. Also described are: (1) CC increases intracellular delivery. Mutant BAD proteins are used to treat createst inflammation and autolimure disease. Polynucleotis, e.g. cancer, viral infection, lymphoproliferation, arthritis, infertility, confidences encoding contrating and autolimure disease. Polynucleotide sequences encoding contrating proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful in treatment of excessive apoptosis such as AIDS, neurodegeneration, actinity of the product of etermined by measuring relative amounts of bosphorylated and non-complete the promoting activity than wild-type BAD which can become company and product that does not heterodimerise with BCL-2 or BCL-Xi but instead binds to 14-3-3 family consultations in the cytosol, thus promoting cell survival. The mutants with accomplete with BCL-2 or BCL-Xi but instead binds to 14-3-3 family consultations of the specified Ser, forming a product that does not accomplete with BCL-2 or BCL-Xi but instead binds to 14-3-3 family consultations of the specified Ser, but instead binds to 14-3-3 family consultations of the specified Ser substituted cannot bind 14-3-3.
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Best Local S
Matches 26
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Synthetic.
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 BAD protein
                         Murine BAD protein.
                                                23-JUL-1998
                                                                          AAW58832;
                                                                                                                                                                                                                                                                           Sequence
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                                                                                                 AAW58832 standard;
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                                                                                                                                                          1998-261422/23
DB; AAV27836.
                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                           204 AA;
                                                                                                                                                                                                            100.0%; ilarity 100.0%; Conservative 0;
 Bcl-XL/Bcl-2 associated
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                                                (first entry)
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                                                                                                protein;
                                                                                                 204
                                                                                                                                                                                                            0;
                                                                                                                                                                                                            Score 138; DB 19;
Pred. No. 1.4e-13;
; Mismatches 0;
                                                                                                 A
cell death regulator;
                                                                                                                                                                                                                                    Length
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                                                                                                                                                                                                                                      204;
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Matches 26
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                                                                                                                                                                                     AAB70369
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                                                                                                            murine BAD mutant amino
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26; Conser
                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                               204 AA;
                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                  Conservative
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This sequence represents a novel serine-phosphorylated protein, BAD (Bc1-X1/Bc1-2 associated cell devolator). The serine residue is phosporylated in a post-translational modification and allows binding to the 14-3-3 protein which is a signal transduction regulator. Modulators of phosphorylated BAD, which at through inhibition/activation of a phosphorylated BAD, which at through inhibition/activation of a phosphorerine phosphatase, are useful for preventing/treating increased/decreased apoptosis in a cell. The increased apoptosis may result from immunodeficiency diseases, senescence, neurodegenerative disease, ischaemic cell death, reperfusion cell death, infertility and wound-healing. Decreased apoptosis may result from cancer, viral infection, lymphoproliferative conditions, arthritis, infertility, inflammation and autoimmune diseases. Measuring the amount of phosphorylated compared to unphosphorylated BAD polypeptide and/or total phosphorylated compared to unphosphorylated BAD polypeptide and/or total BAD in a cell is useful for determining the apoptotic state of a cell.
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Bcl-XL/Bcl-2 associated ceil death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antilischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
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Pred. No. 1.4e-13;
0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                         acid sequence SEQ ID NO:2.
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RESULT 1
AAU0020
ID AAU00
ID AAU
AC AAU
AC AAU
AC AAU
XX
XX
XX
BD 31-W
XX
XX
AC BAd-
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KW HOUS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention describes an isolated or synthetic polypeptide (1) comprising a less than full length amino acid sequence of a mutant CC Edl-KLDC1-2 associated cell death regulator polypeptide (BAD) or its crayment, which contains amino acid substitutions at Seril8 of a human CC BAD, SeriS5 of a murine BAD) (1) has immunostiputed by or Seri31 of a murine CC BAD (SeriS5 of a murine BAD) (1) has immunostiputed antivital of a nurine CC BAD (SeriS5 of a murine BAD) (1) has immunostiputed activities, and contained an apoptosis inducer or inhibitor. BAD polypeptides and contained the seed as an apoptosis inducer or inhibitor. BAD polypeptides and complete can be used as an apoptosis inducer or inhibitor. BAD polypeptides and complete can be used for screening candidate compounds and drugs of antivity that promote cell survival or apoptosis. Other uses include inducting or inhibiting apoptosis in a cell. Candidate compounds of inducing or inhibiting apoptosis in a cell. Candidate compounds continuous diseases, neurodegenerative diseases, viral infections, lymphoproliferative conditions, architits, infartility, inflammation and containmune diseases. The present sequence represents a specifically contained longer murine BAD mutant amino acid sequence from the present of invention.
                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 26
Chimeric -
                                                 Mouse; Bad-DTTR; apoptosis; cancer; spinal muscular atrophy; diphtheria toxin receptor binding domain; DTR; neoplasm; tumour; hyper-proliferation, Alzheimer's disease: neurodegenerative disordar; transient ischaemic neuronal injury; stroke; spinal cord injury;
                                                                                                                                          Bad-DTTR apoptosis-modifying fusion protein.
                                                                                                                                                                             31-MAY-2001 (first entry)
                                                                                                                                                                                                                   AAU00220;
                             Huntington'
                                                                                                                                                                                                                                                     AAU00220 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New mutent Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seril3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 4; Page 148; 157pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2001-138734/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Zhou X;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-MAY-2000; 2000WO-US11864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200110888-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus.
Synthetic.
                                                                                                                                                                                                                                                                                                                                         (APOP-) APOPTOSIS TECHNOLOGY INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-FEB-2001.
                                                                                                                                                                                                                                                                                                                                                                                                             al Similarity 100.0%;
26; Conservative (
Mus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   204 AA;
                                    disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9905-0136783
                                                                                                                                                                                                                                                     567
                                                                                                                                                                                                                                                                                                                                                                                                             0;
                                                                                                                                                                                                                                                                                                                                                                                                           Score 138; DB 22;
Pred. No. 1,4e-13;
); Mismatches 0;
                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 204:
                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                               BXSXEXE
                                                                                                              RESULT 15
                                                                                                                                                                                                                                                                                                                                                                     The sequence represents the amino acid sequence of Bad-DTTR apoptosis-
CC modifying fusion protein comprising Bad gene sequence fused via a short
CC linker to diphtheria toxin translocation domain (DTTR). The
CC functional apoptosis modifying fusion protein is capable of binding a
CC target cell. The apoptosis modifying fusion protein comprises at less
CC target cell and integrating into or crossing a cellular membrane of the
CC target cell and the Bcl-XL domain, which targets the fusion protein to the
CC target cell and the Bcl-XL domain, which modifies an apoptotic response
CC (inhibiting or enhancing) apoptosis in a target cell, such as neuron,
CC lymphocyte, cancer, neoplasm, macrophage, epithelial, stem, tumour or
CC tympher proliferative cell or an adipocyte. It is also useful for reducing
CC apoptosis in a subject after transient ischemkt neuronal injury,
CC especially spinal cord injury conditions through inhibition or enhancement
CC various diseases and injury conditions through inhibition or enhancement
CC such as Alzheimer's disease, Huntington's disease, Spinal muscular
CC various cancers. The apoptosis modifying fusion protein man be delivered
CC effectively throughout the body and targeted to selective tissue and
                                                                                                                                                                                                                                          Ouery Match

100.0%; Score 138; DB 22;
Best Local Similarity 100.0%; Pred. No 4.3e-13;
Matches 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 200
N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Key
Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel fusion protein for modifying apoptosis in target cell and reducing apoptosis after transient ischaemic neuronal injury, has two domains which targets protein to a cell and modifies apoptotic response of cell -
                               15-JAN-1998
                                                               AAW32476;
                                                                                            AAW32476 standard;
                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 4; Page 59-61; 65pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chimeric - Corynebacterium diptheriae Chimeric - Synthetic.
                                                                                                                                                                           Youle RJ, Liu X, Collier RJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HARD ) HARVARD COLLEGE.
(USSH ) US DEPT HEALTH & HUMAN SERVICES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     16-AUG-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-AUG-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO200112661-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2001-218343/22.
DB; AAS00248.
                                                                                                                                                                                                                                                                                                                             567 AA;
                             (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2000WO-US22293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
3..12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "10x histidine tag"
                                                                                              Protein;
                                                                                              166
                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                          Length 567;
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BBC6 protein for regulating cell

death

Gaps

0;

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Search completed: September 20, 2002, 10:35:56 Job time: 424~{\rm SeC}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 82.6%; Score 114; DB 18; Best Local Similarity 91.7%; Pred. No. 6.1e-10; Matches 22; Conservative 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence represents a protein of 166 amino acids. The sequence is disclosed as being a protein called BBC6 which regulates cell death through interaction with BC1-2. The DNA may be used for the production of the recombinant protein, which can be used in unspecified therapeutic or diagnostic procedures, as a molecular weight marker, and to realse antibodies that can be used in unspecified diagnostic or therapeutic applications and to reduce or eliminate the biological activity of the BBC6 protein in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US5663316-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1997-447980/41.
N-PSDB; AAT91561.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Xudong Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (CLON-) CLONTECH LAB INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 1; Column 11-12; 7pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Isolated BBC6 gene - encodes a protein that regulates cell death through interaction with Bcl-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          02-SEP-1997.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BBC6 gene; cell death; cell cycle; Bcl2; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 166 AA;
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Title: Perfect score: Sequence:

US-09-544-664-1 138 1 NLWAAQRYGRELRE

Scoring table:

BLOSUM62 Gapop 10.0 ,

8

protein on:

Minimum DB Maximum DB

seq

length: 0 length: 2000000000

Database

Issued\_Patents\_AA:\*
1: /cgn2\_6/ptodata/2,
2: /cgn2\_6/ptodata/2,
3: /cgn2\_6/ptodata/2,
4: /cgn2\_6/ptodata/2,
5: /cgn2\_6/ptodata/2,
6: /cgn2\_6/ptodata/2,

Searched

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              231628 seqs, 24425594 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       September 20, 2002, 10:30:32;
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Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NLWAAQRYGRELRRMSDEFEGSFKGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/f6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/f6B_COMB.pep:*
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US-08-33-565-2
US-08-733-505A-12
US-08-733-505A-12
US-08-733-505A-14
US-08-733-505A-14
US-08-733-505A-14
US-08-733-505A-14
US-08-731-123-3
US-08-731-123-7
US-08-985-335-7
US-08-985-335-7
US-08-985-335-7
US-08-985-335-7
US-08-985-35-65-56
US-08-661-479-10
US-08-733-505A-55
US-08-733-505A-55
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-56
US-08-733-505A-69
US-08-733-505A-69
US-08-733-505A-69
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US-08-733-505A-69
US-08-733-505A-69
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US-08-733-505A-69
US-08-733-705-74
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Sequence 2, Appli
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                                                                             COUNTRY: CALLED COUNTRY: US
ZIP: 94301
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPAILIBLE
COMPUTER: IBM PC COMPAILIBLE
COMPUTER: IBM PC COMPAILIBLE
COMPUTER: IBM PC CONS/MS-DOS
SOFTMARE: PALENTION DATA:
APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: SMITH, WILLIAM 32.3
REFERENCE/DOKET NUMBER: 30,223
REFERENCADOKET NUMBER: 15726A-000700
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2422
INFORMATION FOR SED ID NO: 2:
SEQUENCE CHARACTERSTICS:
LENGTH: 204 amino acids
TYPE: manno acids
TYPE: manno acids
TYPE: protein
FEARURE:
FEARURE:
FEARURE:
FOOLOGY: Information: //ote- "Deduced amino acid so OTHER INFORMATION: of mouse BAD."

US-08-333-565-2
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US-08-333-565-2
; Sequence 2, Ap
; Patent NO. 562
; GENERAL INFOR
       Query Match 100.0%; Score 138; DB;
Best Local Similarity 100.0%; Pred. No. 4e-14;
Matches 26; Conservative 0; Mismatches
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TITLE OF INVENTION: BC1-X/BC1-2
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Townsend and Townsend Khourie and
STREET: 379 Lytton Avenue
CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ce 2, Application US/08333565
NO. 5622852
AL INFORMATION:
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US-08-718-738-18

US-09-221-844-18

US-09-223-848-40

US-09-229-843A-40

US-09-239-81378-40

US-09-359-161-7

US-08-97-780-170

US-08-97-780-170

US-08-97-782-170

US-09-95-855-170

US-09-95-855-170

US-09-95-855-170

US-08-97-160-94

US-08-97-960-94

US-09-08-873-970-94

US-09-324-542-94
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                                                                  1; Length 204;
              0
              Indels
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18. Appl
18. Appl
18. Appl
18. Appl
20. Appl
40. Appl
40. Appl
70. Appl
170. 
              Gaps
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Result No.

Score

Length

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RESULT 3
US-08-733-505A-1
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US-08-661-479-2
                                                           Sequence 1, Application US/08733505A Patent No. 5856445 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 26; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Smith, William M. REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 1572
TELEPONHUNICATION INFORMATION:
TELEPAX: (415) 326-2400
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY
  APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION: 435
PRIOR APPLICATION NUMBER: (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: Bcl * x/Bcl * 2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WOLECULE TYPE: protein
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                                                                                                                                                                                          140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: 11-JU
                                                                                                                                                                                                              1 NEWAAQRYGRELRRMSDEFEGSFKGL 26
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LOCATION: 1..204
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-JUN-1995
N: 435
                                                                                                                                                                                                                                                                100.0%; Score 138; DB 2; Length 204; 100.0%; Pred. No. 4e-14; Live 0; Mismatches 0; Indels (
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: Sequence 12, Application US/08733505A

: Patent No. 5856445
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Best Local S
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INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/733
FILING DATE: 530
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9654
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF MUMBER OF SEQUENCES: 60 CORRESPONDENCES: 60 CORRESPONDENCE ADDRESS:
                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA RELEASE #1.0, Version
CURRENT APPLICATION DATA:
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 965458
TELECOMMUNICATION INFORMATION:
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MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
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CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
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STREET: 7733 FORSYTH BLVD., SUITE 1400
CITY: ST. LOUIS
STATE: MISSOURI
                                                                                                               APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 204 amino acids TYPE: amino acid STRANDEDNESS:
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965458
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INFORMATION FOR SEQ ID NO:

(314)

727-6092 NO: 12:

TELEPHONE:

(314) 727-5188

SEQUENCE CHARACTERISTICS

LENGTH:

204 amino acids

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US-08-733-505A-13
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RESULT
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Best Local Similarity 100.0%;
Matches 26; Conservative (
                                                                                         Matches
                                                                                                               Query Match
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                                                                                                                                                                                                                                   TELEFAX: (314) 727-609
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: 11
MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: KORSMEYER, STAMLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             140
                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
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TOPOLOGY: 1
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                                   LENGTH:
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                                                                                         26;
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7733 FORSYTH BLVD., SUITE 1400
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                                                                                         Conservative
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Pred. No. '
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Pred. No. 4e-14;
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                                                                                                                                                                                                                                                                                                                                                              RESULT 7
US-08-717-123-3
                                                                                                                                                                                                                                                                                                       Sequence 3, Application US/08717123
Patent No. 5965703
GENERAL INFORMATION:
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Patent No. 5856445
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: (314) 727-60 TELEFAX: (314) 727-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS: HOMELL & HAFERKAMP, L.C.
ADDRESSEE: HOMELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
COMPUTER READABLE FORM:

COMPUTER: Floppy disk

COMPUTER: IBM PC compartible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: PATENTIN Release #1.0, Version #1.25

CURRENT APPLICATION DATA:
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TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                          TITLE OF INVENTION: Human BAD Polypeptides, TITLE OF INVENTION: Acids and Methods of Us
                                                                                                                                                                                                                                                                        APPLICANT: Horne, William A. APPLICANT: Oltersdorf, Tilma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 96
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: US/O: FILING DATE: CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION: NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: 11
MOLECULE TYPE:
                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                  140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
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26; Conserv
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California
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amino acid
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                                                                                                                                                                       E: Campbell and Flores
4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KORSMEYER,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; ilarity 100.0%; Conservative
                                                                                                                      United States
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727-6092
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SERINE SUBSTITUTED MUTANTS OF

BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
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Pred. No. 4e-14;
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APPLICATION NUMBER: FILING DATE: 20-SE

20-SEP-1996

US/08/717,123

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                                                                                              ; MOLECULE TYPE: protein US-08-665-617-2
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Best Local Similarity
Thes 25; Conserva
                                         Query Match
Best Local
                              Matches
                                                                                                                                                                                  TELEPHONE: (352) 375-8100
TELEFAX: (352) 372-5800
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC-popatible
OPERATING SYSTEM: PC-pos/MS-Dos
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                        NAME: Saliwanchik, David R. RECISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: CL-8
TELECOMMUNICATION INFORMATION:
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LENGTH: 204 amino acic
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TELEFAX: (619) 535-8949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: GENUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
TOPOLOGY: 11r
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REFERENCE/DOCKET NUMBER: P-
                                                                                                                                                                                                                                                                                                                               FILING DATE:
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                                                                                                                                                                    LENGTH:
 1 NLWAAQRYGRELRRMSDEFEGSFK 24
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), 5663316
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                                            Similarity
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2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                           USA
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                                                                                                                              linear
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91.7%;
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                            Score 114; DB 1; Length 166; Pred. No. 1.8e-10; Mismatches 2; Indels
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Pred. No. 1
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RESULT 9
US-08-717-123-2
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                                                                                                                                                                                                                                                           US-08-985-335-1
                                                                                                                                                                                                        Sequence 1, Application Patent No. 6080847
GENERAL INFORMATION:
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Best Local
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APPLICANT:
                                                      APPLICANT: COTLEY, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 9-1
REFERENCE/DOCKET NUMBER: P-1
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9049
TELEFAX: (619) 535-8949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: Patentin Release #1.0.
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acids
TYPE: amino acid
TOPOLOGY: 1:
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                                              ADDRESSEE:
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5. 5965703
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22; Conservative
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T: 4370 La Jolla Village Drive, Suite 700
San Diego
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Palo Alto
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United States
                            E: Incyte Pharmaceuticals, Inc
3174 Porter Dr.
                                                                                                                                         Lal, Preeti
Shah, Purvi
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                                                                                                                                                                                           Hillman, Jennifer L.
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nes 2;
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US-08-985-335-7; Sequence 7, Applic; Patent No. 6080847
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Best Local Similarity
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INFORMATION FOR SEQ ID NO: 1:
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APPLICATION NUMBER: US/08/985,335
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LIBRARY: SYNOR
CLONE: 358673
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NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/OCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
                            COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOCTWARE: PastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/985,335
FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                               COUNTRY: USA
ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
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FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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TITLE OF INVENTION: PROTEI
TITLE OF INVENTION: PROLIF
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                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
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TTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                        STATE:
                                                                                                                                                                                                                                                     STREET: 3174 Por
CITY: Palo Alto
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91.7%;
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Pred. No. 1.8e-10;
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RESULT 12
US-09-410-372-1
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Best Local Similarity
                                                                              TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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TELECOMMUNICATION INFORMATION:
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                                                                                                                                TELECOMMUNICATION INFORMATION: TELEPHONE: 650-855-0555
                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                    SOFTWARE: FastSEQ for Windows Version CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEI
TITLE OF INVENTION: PROLIF
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            TOPOLOGY: line
IMMEDIATE SOURCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 3174 FOI CITY: Palo Alto
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                                                                                                                                                                            NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749
                                                                                                                                                                                                                                                                        FILING DATE:
                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE:
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                                       STRANDEDNESS:
                                                           TYPE:
                                                                                                                                                                 REFERENCE/DOCKET NUMBER: PF-0421 US
                                                                                                                                                                                                                             FILING DATE:
                                                                                                                                                                                                                                                                                    APPLICATION NUMBER:
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                                                                        LENGTH:
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SYNORAB01
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Pred. No. 1
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Best Local Similarity
""" hohes 22; Conserv
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US-09-410-372-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acids
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                                                                                                                                                                                                                                                                                                               IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: 1683637
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MEDIUM TYPE: Diskett
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103 NLWAAQRYGRELRRMSDEFVDSFK 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
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TOPOLOGY: 11
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                                                             1 NLWAAQRYGRELRRMSDEFEGSFK 24
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EGISTRATION NUMBER:
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3174 Porter Dr.
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Pred. No. 1.8e-10;
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RESULT

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RESULT 15
US-08-661-479-10
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GENERAL INFORMATION: KORSME
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEPHONE: (415) 326-22
TELEFAX: (415) 326-242
INFORMATION FOR SEO ID NO:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
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NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 1572
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                             TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES:
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MEDIUM TYPE: Floppy disk
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SOFTWARE: Patentir
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TITLE OF INVENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                               CITY: Palo Alto
STATE: California
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TYPE: amino acid
STRANDEDNESS: single
   APPLICATION NUMBER:
                                                                                                                                            COUNTRY:
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STATE: California
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VENTION: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
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100.0%; Pred. No. 2.
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US/08/661,479
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PRIOR APPLICATION HOMES: US 08/733.565

PRIOR APPLICATION WARRE: US 08/733.565

APPLICATION WARRE: US 08/733.565

APPLICATION WARRE: US 08/733.565

APPLICATION WARRE: US 08/733.565

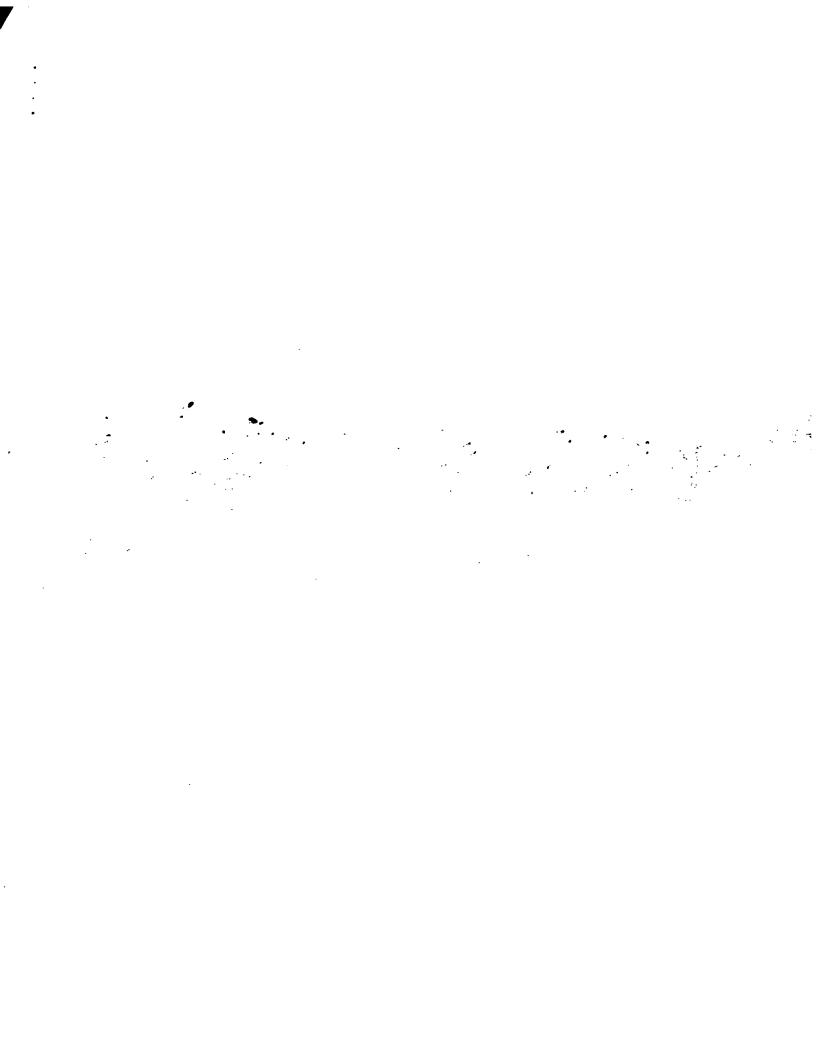
APPLICATION WARRE: US 08/733.565

APPLICATION WARRE: US 08/733.565

ARRESTRATION WARRE: US 08/733.565

REFERENCE: US 08/735.561

REFERENCE: US 08/73
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score greater than or equal to the score of the result being printed,
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Listing first 45 summaries
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### ALIGNMENTS

C;Accession: A55671
R;Yang, E.; Zha, J.; Jockel, J.; Boise, L.H.; Thompson, C.B.; Ko
Cell 80, 285-291, 1995
A;Title: Bad, a heterodimeric partner for Bcl-x-L and Bcl-2, dia
A;Reference number: A55671; MUID: 95136361
A;Accession: A55671
A;Status: preliminary; not compared with conceptual translation
A;Status: preliminary;

C;Species: Mus musculus (house mouse)
C;Date: 03-Mar-1995 #sequence\_revision 03-Mar-1995 #text\_change 05-Nov-1999

Jockel, J.; Boise, L.H.; Thompson, C.B.; Korsmeyer, S.J.

displaces Bax and

promot

bad protein C; Species: M RESULT A55671

- mouse

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inter-alpha-trypsin inhibitor heavy chain 2 golden h. C:Species: Mesocricetus auratus (golden hamster) C:Date: 23-Sep-1997 #te:C:Accession: JC575; PC4485 C:Accession: JC575; PC4485 R;Nakatani, T.; Suzuki, Y.; Yamamoto, T.; Sinohara, H. J. Biochem. 122, 71-82, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: mrNA
A;Residues: 1-204 </TAN-
A;Cross-references: GB:L37296; NID:g639778; PIDN:AAA64465.1; PID:g639779
C;Keywords: heterodimer
A;Molecule type: protein
A;Molecule type: protein
A;Residues: 55-64;140-146;151-156;424-447;500-528;577-605 <NA2>
C;Comment: In the plasma three inter-alpha-trypsin inhibitor heavy
that the complexes play important role for panceatic cancer.
C;Superfamily: inter-alpha-trypsin inhibitor complex component II
F;261-264,717-916/Disulfide bonds: #status predicted
                                                                                                                                                                                                                                                                                       A; Title: Molecular cloning and sequencing sin inhibitor heavy chain family.
A; Reference number: JC5574; MUID:97420688
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Thehes 26; Conserv
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                                                                                                                                                                                                                                                              A; Reference number: A; Accession: JC5575
                                                                                                                                                                                     A;Cross-references: DDBJ:D89286; NID:g1694689; PIDN:BAA13939.1; PID:g1694690
                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-946 < NAK>
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RESULT
S38185
2-dehydro-3-deoxyphosphoheptonate aldolase (EC 4.1.2.15) ARQ4 - yeast (Saccharomyces ce: N;Alternate names: 3-deoxy-D-arabino-heptulosonate-7-phosphate synthase; DAHP synthase; C;Species: Saccharomyces cerevisiae
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C;Superfamily: inter-alpha-trypsin inhibitor complex component II
                                                                                                                                                                                                                                                                                                                                                                                                                                                    R;Chan, P.; Risler, J.L.; Raguenez, G.; Salier, J.P.
Biochem. J. 306, 505-512, 1995
A;Title: The three heavy-chain precursors for the inter-alpha-inhibitor family in A;Reference number: S54353; MUID:95194326
A;Accession: S54354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         inter-alpha-inhibitor H2 chain - mouse
C;Species: Mus musculus (house mouse)
C;Date: 15-7ull-195 #sequence_revision 01-Sep-1995 #text_change
C;Accession: S54354
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
A;Authors: Sqares, F. Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987
A;Accession: D70760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein Rv2014 - Mycobacterium tuberculosis (strain H37RV) C;Speciles: Mycobacterium tuberculosis (c;Speciles: Mycobacterium tuberculosis C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 22-Oct-1999 C;Accession: D70760 R;Cole, S:T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: GB:Z74025; GB:AL123456; NID:g3261586; PIDN:CAA98415.1; A;Experimental source: strain H37Rv
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C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 04-Mar-1993 #sequence_revision 18-Nov-1994
C;Accession: A42095; S52633; T47593
R;Jack, T.; Brockman, L.L.; Meyerowitz, E.M.
                                                                                         floral homeotic protein APETALA3 (AP3) - Arabidopsis thaliana
N;Alternate names: homeotic protein APETALA3; MADS-box regulatory protein AP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Description: aldehyde-lyase; carbon-carbon lyase
A;Pathway: aromatic amino acid biosynthesis; shikimate pathway
A;Note: first step in shikimate pathway
C;Superfamily: phospho-2-dehydro-3-deoxyheptonate aldolase
C;Keywords: aldehyde-lyase; aromatic amino acid biosynthesis; carbon-carbon lyase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references:
A;Map position: 2R
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: DNA
A; Residues: 1-204,208-370 <KUE>
A; Cross-references: EMBL: X61107
R; Kuenzler, M.; Balmelli, T.; E;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gene 113, 67-74, 1992
A;Title: Cloning, primary structure
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A:Cross-references: GB:L20296; NID:g311101; R:Aljinovic, G.; Pohl, F.M.; Pohl, T.M. submitted to the Protein Sequence Database, A;Reference number: S45906
A:Accession: S46126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Gene: SGD: ARO4
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A; Residues: 352-370 <KU2>
A; Cross-references: GB: X61107
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A:Title: Closing -----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: S45940
A; Accession: S46130
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A; Residues: 1-370 < DOI>
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1137, 1993
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47.68;
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ELRRLSDAVEGSF

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Jung, K.H.; Alam, M.; Freitas, T.

Proc. Natl. Acad. Sci. U.S. A. 97, 12176-12181, 2000

A; Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Lia, A.; Ettle: Genome sequence of Halobacterium species NRC-1.

A; Reference number: A84160; MUID:20504483

A; Accession: C84338

A; Accession: C84338

A; Status: preliminary

A; Status: preliminary
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A; Accession: T47593
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-232 < BLO>
A; Cross-references: EMBL:AL132971
A; Experimental source: cultivar Columbia; BAC clone T12E18
C: Genetics:
A; Map position: 3
A; Introns: 63/2; 85/3; 106/2; 139/3; 153/3; 168/3
A; Note: T12E18 30
C: Superfamily: transcription factor squa; serum response factor DNA-binding domain homology <SRF>
F; 2-57/Domain: serum response factor DNA-binding domain homology <SRF>
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R; Okamoto, H.; Yano, A.; Shiraishi, H.; Okada, K.; Shimura, Y.
Plant Mol. Biol. 26, 465-472, 1994
A;Title: Genetic complementation of a floral homeotic mutation, apetala3, with A;Reterence number: S52633; MUID:95036018
A;Accession: S52633
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A;Rocession: A42095
A;Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
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R:Bloecker, H.; Mewes, H.w.; Lemcke, K.: Mayer, K.F.X.; Quetier, submitted to the Protein Sequence Database, March 2000
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A;Molecule type: DNA
A;Residues: 1-63 <OKA>
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; Pred. No. 5.8;
3; Mismatches
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probable threonine synthase [imported] - Arabidopsis thaliana
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001
C:Accession: A96753
R:Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alc
C:Din, C.W.; Ching, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar,
C:Din, C.W.; Ching, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar,
ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Anthors: Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Anthors: Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Anthors: Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Anthors: Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Alactors: Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
A; Alactors: Malathery, C. M.; Schwartz, J.; Jakano, H.
A; Althors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tall
A; Reference and analysis of chromosome I of the plant Arabidopsis.
A; Reference number: A86141; MUID: 21016719
A; Reference number: A86141; MUID: 21016719
                                                                                                                                                                                                                                                                                 A; Gene: F3N23.1
A; Map position:
                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: GB:AE005173; NID:g5903070; PIDN:AAD55628.1; GSPDB:GN00141
C;Genetics:
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A; Residues: 1-516 <STO>
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Matches 12
163 NLFWAERFCKQYLQMNDLWVKHCGISHTGSFKDL 196
                                                           1 NLWAAQRYGRELRRMSD-----EFEGSFKGL
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12; Conservative
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Pred. No. 19;
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A;Cross-references: GB:AE004535; GB:AE004091; NID:g9946936; PIDN:AAG04420.1; A;Experimental source: strain PAO1 C;Genetics: A;Gene: PA1031
                                                                                                                        A; Molecule type: DNA
A; Residues: 1-453 <STO>
                                      Matches
                                              Query Match
Best Local :
65
               3 WAAQRYGR--ELRRMSDE 18
                                                                                                                                            preliminary
 WASERQGREEELRRLASE 82
                                     1 Similarity
10; Conser
                                      Conservative
                                             35.5%;
                                    Score 49; DB Pred. No. 23; 4; Mismatches
                                            DB
. 23;
                                                         Ŋ
                                                         Length 453;
                                      2
                                      Gaps
                                                                                                                  GSPDB:GN
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transforming protein homolog MRAS3 - Rhizomucor racemosus
C:Species: Rhizomucor racemosus
C:Species: Rhizomucor racemosus
C:Date: 28-Mar-1991 *sequence_revision 28-Mar-1991 *text_change 19-Jan-2001
C;Accession: C36365
C:Date: 28-Mar-1991 *sequence_revision 28-Mar-1991 *text_change 19-Jan-2001
C;Accession: C36365
NCCONGELL, D.G.: Wang, S.Y.: Lee, Y.J.: Linz, J.E.
MAI. (Call. Biol. 10, 6654-6663, 1990
N.;Title: Expression of a gene family in the dimorphic fungus Mucor rdcemosus which exhib A;Reference number: A36365; MUID:91061774
A;Recession: C36365
A;Croston: C36365
A;Accession: C364663
A;Residues: 1-206 *CAS>
A;Crosts-references: CB:M55177
C;Keywords: CTP binding; nucleotide binding; P-loop
C;Keywords: CTP binding; nucleotide binding; P-loop
C;Keywords: CTP binding; nucleotide binding; P-loop
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C;Date: 06-Mar-1994 #sequence_revision 26-May-1995 #text_change 21-Jan-2000
C;Accession: $40376
R;Klein, R.; Jaenichen, R.; Zachau, H.G.
Eur. J. Immunol. 23, 3248-3271, 1993
A;Title: Expressed human immunoglobulin chi genes and their hypermutation. A:Reference number: $40312; MUID:94080891
A;Reference number: $40312; MUID:94080891
A;Accession: $40376
A;Status: preliminary: translation not shown
A;Residues: 1-134 <KLE>
A;Molecule type: mRNA
A;Residues: 1-134 <KLE>
A;Cross-references: EMBL: X72486; NID:9441440; PIDN:CAA51154.1; PID:9441441
C;Superfamily: immunoglobulin v region: immunoglobulin homology
C;Koyvords: heterotetramer; immunoglobulin homology
C;Koyvords: heterotetramer; immunoglobulin homology
C;Koyvords: heterotetramer; immunoglobulin homology
C;Molecule type: mRNA
A;Residues: 1-134 <KLE>
A;Cross-references: EMBL: X72486; NID:9441440; PIDN:CAA51154.1; PID:9441441
C;Kuyvords: heterotetramer; immunoglobulin homology
C;Koyvords: heterotetramer; immunoglobulin homology
C;Molecule type: mana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R:Battey, N.H.: James, N.G.: Greenland, A.J.

Plant Physiol. 112, 1391-1396, 1996

A;Title: CDNA isolation and gene expression of maize annexins P33 and P35.

A;Reference number: Z14796; MUID:97092863

A;Accession: T02975

A;Status: prelininary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Molecule type: mRNA

A;Residues; 1-314 (EMAT)

A;Cross-references: EMBL:X98245; NID:91370602; PIDN:CAA66901.1; PID:91370603

A;Experimental source: cultivar clipper; root tip
C;Superfamily: annexin repeat homology
F;14-85/Domain: annexin repeat homology <AXR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           annexin P35 - maize
C;Species: Zea mays (maize)
C;Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change
C;Accession: T02975
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C36365
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Best Local S
Matches 10
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Best Local S
Matches 13
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Pred. No. 19;
4; Mismatches
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T08545
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A:Molecule type: DNA
A:Molecule type: DNA
A:Residues: 1-56 <BEV>
A:Residues: 1-56 <BEV>
A:Cross-references: EMBL:AL050352; GSPDB:GN00062; ATSP:F27B13.80
A:Cross-references: EMBL:AL050352; GSPDB:GN00062; ATSP:F27B13.80
A:Experimental source: Cultivar Columbia; BAC clone F27B13
A:Courien, G: Dumas, R.; Ravanel, S.; Douce, R.
F2BS Lett. 390, 85-90, 1996
A:Title: Characterization of an Arabidopsis thaliana cDNA encoding an S-adenosylmethi
A:Reference number: S71362; MUID:96314555
A:Accession: S71362.
                                                                                                                                                                                                                                                                                                                                                                                N;Alternate names: protein r27Bi3.80
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 07-Dec-1999
C;Accession: T08545; S71362; S74307
R;Bevan, M.; Zimmermann, W.; Gruenelsen, A.; Wambutt, R.; Bancroft, I.; Mewe submitted to the Protein Sequence Database, May 1999
A;Reference number: Z16442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: TMl154
C; Superfamily:
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C;Species: Thermotoga maritima
C;Species: Thormotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 21-Jul-2000
C;Accession: F72289
R;Nelson, K,E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F:17-24/Region: nucleotide-binding motif A (P-loop)
F:123-126/Region: GTP-binding NKXD motif
F:153-155/Region: GTP-binding NKXD motif
F:23,24,42,123,124,126,153/Binding site: Mg-GTP (Lys, Ser, Thr,
                                                     A; Molecule type: mRNA
A; Residues: 'L',3-526 <CUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nature 399, 323-329, 1999
A;Title: Evidence for lateral gene transfer between Archaea and Bacteria from genome A;Reference number: A72200; MUID:99287316
A;Accession: F72289
A;Cross-references: EMBL:L41666; A;Accession: S74307
                                                                                                                                                                                                                                                                                                                                                             A; Reference number:
A; Accession: T08545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 threonine synthase (EC 4.2.99.2) precursor - Arabidopsis thaliana
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A;Molecule type: DNA
A;Rosidues: 1-220 «ARN»
A;Cross-references: GB:AE001772; GB:AE000512; NID:g4981693; PIDN:AAD36230.1; PID:g498
A;Experimental source: strain MSB8
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Best Local S
Matches 8
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34.8%; Pred. NO. 15;
Live 8; Mismatches
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                        NID: g1448916; PIDN: AAB04607.1; PID: g1448917
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Pred. No. 14;
2; Mismatches
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oxaloacetate decarboxylase, alpha chain VC0550 [similarity] - Vibrio cholerae (Strain N C;Species: Vibrio cholerae (Species: Vibrio cholerae)
C;Species: Vibrio cholerae
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
C;Accession: G82308
R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J.
chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragol, I.; Sellers,
L, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
A;Reference number: A82035; MUID:20406833
A;Accession: G82308
A;Scatus: preliminary
A;Kolernie from. num
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A:Genetics:
A:Gene: ATSP:F27B13.80
A:Map Position: 4
A:Map position: 4
A:Genome: nuclear
C:Keywords: carbon-oxygen lyase; chloroplast
F:1-39/Domain: transit peptide (chloroplast) #status predicted <TNP>
F:40-526/Product: threonine synthase #status experimental <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
A; Residues: 1-597 < CHEIV
A; Cross-references: GB: AED04141; GB: AE003852; NID: g9654976; PIDN: AAF93718.1; GSPDB: GN001
A; Cross-references: GB: AE004141; GB: AE003852; NID: g9654976; PIDN: AAF93718.1; GSPDB: GN001
A; Experimental source: serogroup OI; strain NI6961; biotype El Tor
C; Genetics:
C; Genetics: VC0550
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Map position: 1
C; Superfamily: Klebsiella pneumoniae oxaloacetate decarboxylase alpha chain; lipoyl/biot
Search completed: September 20, 2002, 10:39:02
Job time: 474 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 34.8%; Score 48; DB 2; Best Local Similarity 35.3%; Pred. No. 37; Matches 12; Conservative 6; Mismatches
                                                                                                                                                                                                                                                                                        Ouery Match

34.1%; Score 47; DB 2; Length 597;
Best Local Similarity 47.4%; Pred. No. 60;
Matches 9; Conservative 4; Mismatches 6; Indels
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0 saccharomyc
1 mus musculu
5 pyrococcus
7 yersinia en
4 saccharomyc
4 autographa

mus musculu homo sapien macaca mula escherichia

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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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DB seq length: 2000000000
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Gapop 10.0 , Gapext 0.5
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ITHA_MESAU
ITHA_ROUS_SALTU
ITHAC_BATH
BIM_HUMAN
ITHAC_BATH
BIM_HUMAN
RPOB_CAMME
ITHAC_BATH
BIM_AUTEL
EMR1_ANTEL
EMR1_BATH
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22.376 Million cell updates/sec
      06137 mus musculu
035147 rattus norv
092934 homo sapien
p97279 mesocricetu
061703 mus musculu
061703 mus musculu
p32449 saccharomyc
p35632 arabidopsis
091443 pseudomonas
p22280 rhizomucor
09x008 thermotoga
09mc18 solanum tub
09s7b5 arabidopsis
043521 homo sapien
016994 anthopleura
p10419 anthopleura
p10419 anthopleura
p19823 homo sapien
046124 campylobact
046124 campylobact
046124 campylobact
046124 campylobact
021059 polyorchis
03013 calliactis
030163 calliactis
030163 calliactis
030163 calliactis
030163 calliactis
030163 calliactis
030163 calmonella
01049 homo sapien
p05886 simian immu
010823 cascherichia
p33900 salmonella
054918 mus musculu
086495 gattus norv
p50465 escherichia
p37977 simian immu
p77977 simian immu
p77977 simian immu
p773327 synechocyst
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      9 homo sapien
6 simian immu
3 caenorhabdi
2 escherichia
6 sAlmonella
8 mus musculu
8 rattus norv
5 escherichia
7 simian immu
7 synechocyst
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9 polyorchis
3 calliactis
9 kluyveromyc
0 salmonella
7 klebsiella
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            RP MUTAGENESIS OF SERINE RESIDUES.

RP MUTAGENESIS OF SERINE RESIDUES.

RP MADATEM S.R., Kalsov A., Hu L., Petros A., Fesik S.W., Yaffe M.B.,

RA Greenberg M.E.;

RA 
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061337;
101-NOV-1997 (Rel. 35, Created)
11 01-NOV-1997 (Rel. 41, Last sequence update)
12 01-NAR-2002 (Rel. 41, Last annotation update)
13 Bell-antagonist of cell death (BAD) (Bel-2 binding consequence)
14 (Bel-xL/Bel-2 associated death promoter).
15 BAD OR BBC6
15 Mus musculus (Mouse).
16 Elkaryota; Metazoa; Chordata; Craniata; Vertebrata; Elemanmalia; Butheria; Rodentia; Sciurognathi; Muridae; Metazoa; Chordata; Sciurognathi; Metazoa; Chordata; Sciurognathi; Muridae; Metazoa; Chordata; Sciurognathi; Metazoa; Chordata; Metazoa; M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4444443354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PHÓSPHORYLATION, AND MUTAGENESIS OF SER-112 AND SER-136. MEDLINE=98022383; PubMed=9381178; Del Peso L., Gonzalez-Garcia M., Page C., Herrera R., Nu. "Interleukin-3-induced phosphorylation of BAD through th kinase Akt."; Science 278:687-689(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
TISSUE-Brain, and Thymus;
MEDLINE-05136561; PubMed-7834748;
Yang E. Zha J. Jockel J., Boise
"Bad, a heterodimeric partner for
promotes cell death.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOUSE
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APJ_MOUSE
APJ_HUMAN
APJ_HUMAN
APJ_HCMU
ACEK_ECOLI
ACEK_SALTY
MDLJ_YEAST
ZO3_MOUSE
THIE_PYRAB
RFBA_YEREN
SNF4_YEAST
YO30_NPVAC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L.H., Thompson C.B., Korsmeyer S.J., Bcl-XL and Bcl-2, displaces Bax and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Herrera R., Nunez G.;
BAD through the protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   component
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Q9wv08
P39414
O97666
P11071
P51067
P33310
Q9qxy1
P41434
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Result No.

Score

Query Match

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Minimum

Total number of

Maximum

Database

Pred. score and is

ı.

Title: Perfect score:

protein

Scoring table: Sequence:

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Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAD_RAT STANDARD; PRT; 205 AA. 035147; 070256; 093HX1; 16-0CT-2001 (Rel. 40, Created) 16-0CT-2001 (Rel. 40, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) Bc12-antagonist of cell death (BAD) (Bc1-2 binding 6) (Bc1-xL/Bc1-2 associated death promoter).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Apoptosis;
DOMAIN
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                                                                                                                                          MEDLINE-98194755; pubMed-9535132; D'Agata V., Magro G., Travali S., "Cloning and expression of the prothe rat brain.";
                                                                                                                                                                                                                                                                                                 MEDLINE=98034386; PubMed=9369453;
HSu S.Y., Kalpla A., Zhu L., Hsueh A.J.W.;
"Interference of BAD (Bc1-xL/Bc1-2-bassociated de
apoptosis in mammalian cells by 14-3-3 isoforms
Mol. Endocrinol. 11:1858-1867(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation. The European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
     MEDLINE-21109372;
Hamner S., Arumae
                                                                       SEQUENCE FROM N.A. (ISOFORMS ALPHA
                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; L37296; AAA64465.1; -. MGD; MGI:1096330; Bad. InterPro; IPR000712; Bcl_2. PROSITE; PS01259; BH3; FALSE.
                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26;
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Similarity 100
26; Conservative
                                                                                                                    Lett.
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1145
112 112
136
135 155
155 155
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                                                                                                                  243:137-140(1998).
  PubMed=11161472;
U., Yu L.-Y., Sun
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Pred. No. 8.6
0; Mismatches
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"Functional characterization of two splice variants of rat BAD and their interaction with Bc1-w in sympathetic neurons.";

Wol. Cell. Neurosci. 17:97-106(2001).

C -!- FUNCTION: Promotes cell death. Successfully competes for the binding to Bc1-x(L), Bc1-2 and Bc1-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bc1-x(L), but not that of Bc1-2 (By similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

C :- SUBUNIT: Forms heterodimers with the anti-apoptotic proteins, Bc1-2 (N), Bc1-2 and Bc1-w. Also binds protein $100A10. The Ser-113/Ser-137 phosphorylated form binds 14-3-3 proteins.

C :- SUBCELLULAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm (By similarity).

C :- ALTERNATIVE PRODUCTS: 2 isoforms; alpha (shown here) and beta; are produced by alternative splicing. They differ only in their C-terminal regions.

C :- TISSUE SPECIFICITY: Expressed in all tissues tested, including brain, liver, spleen and heart. In the brain, restricted to epithelial cells of the choroid plexus. Isoform alpha is the more
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-slb.ch/announce/or send an email to licenseeisb-slb.ch).

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CONFLICT
                                   MUTAGEN
                                                 MUTAGEN
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EMBL: AF031227; AAC15100.1; --
EMBL: AF279910; AAF91427.1; --
EMBL: AF279911; AAF91428.1; --
EMBL: AF279911; AAF91428.1; --
InterPro: IRF000712; Bcl_2.
PROSITE; PS01259; BH3; FALSE_N
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205
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tion; Alternative splicing
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SIMILARITY).

SIMILARITY).

LPRENGAGTATOMIQOSASWTRIIQSWWDRNLGKGGSTPSQ
- EBLITYSVEFILPYRAIAMEGWPLLWSFQSFPHTLPPTPP
EVAMFPLRYWTALRRIC (IN ISOFORM BETA).
S->A: NO EFFECT ON HEFERODIMERIZATION
WITH 14-3-3 PROTEINS.
S->A: NO HEFERODIMERIZATION WITH 14-3-3
PROTEINS. NO EFFECT ON HEFERODIMERIZATION
WITH BCLZ NOR WITH PROTEIN P11.
SDAGGR -> ERRGRK (IN KEF. 1).
MW; TAFA/1DAE9CF4ABI CRC64;
    ¥.
                                                                                     PHOSPHORYLATION (BY CAPK AND PKB) (BY SIMILARITY).
PHOSPHORYLATION (BY CAPK AND PKB) (BY
                                                                                                              PHOSPHORYLATION (BY CAPK AND PKB) SIMILARITY).
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Query Match Best Local S Matches 26

ch 100.0%; Similarity 100.0%; 26; Conservative 0

Score 138; DB 1; Pred. No. 8.7e-14; Mismatches 0;

Length Indels

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Q92934; Q148
Q1-NOV-1997
                                                                                                                                            Fesik S.W.;

Fesik S.W.;

Fesik S.W.;

Fesik S.W.;

Frationale for Bcl-xL/Bad peptide complex formation from structure, mutagenesis, and biophysical studies.";

Protein Sci. 9:2528-2534(2000).

FUNCTION: Promotes cell death. Successfully competes for the binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

Forms heterodimers with the anti-apoptotic proteins, Bcl-1 Sumilarity). Bcl-2 and Bcl-w. Also binds protein $100A10 (By similarity). The Ser-75/Ser-99 phosphorylated form binds 14-3-3 proteins (By similarity).
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01-MAR-2002 (Rel. 41, Last annotation update)
BC12-antagonist of cell death (BAD) (BC1-2 b
6) (BC1-XL/BC1-2 associated death promoter).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ottilie S., Diaz J.-L., Horne W., Chang J., v
Chang S., Weeks S., Fritz L.C., Oltersdorf T.
"Dimerization properties of human BAD.";
J. Biol. Chem. 272:30866-30872(1997).
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Eukaryota; Metazoa;
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Submitted (OCT-1997) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wang H.-G., Rapp U.R., Reed J.C.; "BC1-2 targets the protein kinase Raf-1 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A., AND PHOMEDLINE-97083574; PubMed-85
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human protein that i
                                                                          SUBCELLULAR LOCATION: Outer mitochondrial membrane. phosphorylation, locates to the cytoplasm.
TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF
DOMAIN: Intact BH3 domain is required by BAX for their pro-apoptotic activity and with anti-apoptotic members of the Bcl-2
                                                                       phosphorylation, lo
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Matayoshi E.D.,
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Zhang H., Thompson
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h Bcl-2 and have homology
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Best Local
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15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Inter-alpha-trypsin inhibitor heavy chain H2
chain H2) (HC2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                    *Molecular cloning and sequencing of cDMAs encoding three precursors of the inter-alpha-trypsin inhibitor in Syrian implications for the evolution of the inter-alpha-trypsin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                          Mesocricetus auratus (Golden hamster)
Eukaryota; Metazoa; Chordata; Craniata
Mammalia; Eutherla; Rodentla; Sciurogr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                MEDLINE=97420688; PubMed=9276673;
                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=Liver;
                                                                                                                                                                                                              NCBI_TaxID-10036;
                                                                                                                                                                                                                                        Mesocricetus
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AF021792; AAB72092.1; -.
AF031523; AAB88124.1; -.
BC001901; AAH01901.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
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PQLLPRGDGGRRRDGGGAQ (IN REF.;
69FD8D27DDEE3241 CRC64;
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PHOSPHORYLATION
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Sciurognathi; Muridae;
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; Cricetinae;
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heavy-chain hamster:

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Best Local
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[2]
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CONFLICT
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CARBOHYD
BINDING
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DOMAIN
CARBOHYD
CARBOHYD
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AND SUBUN
                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
ITH2_MOUSE STA
Q61703;
15-JUL-1998 (Rel.
                                                                                                                                                                                                                                                   Glycoprotein.
SIGNAL
                                                                                                                                                                                                                                     CHAIN
                                                                                                                                                                                                                                                                            Pfam; PF00092; vwa; 1
SMART; SM00327; VWA;
PROSITE; PS50234; VWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Plasma;
                                                                                                                                                                                                                                              PROPEP
                                                                                                                                                                                                                                                                    Serine protease
                                                                                                                                                                                                                                                                                                            EMBL; D89286; BAA13939.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Yamamoto T., Yamamoto K., Sinohara H.;
"Inter-alpha-trypsin inhibitor and its related proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-97018241;
                                                                                                                                                                                                                                                                                                    InterPro;
                                                           212
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                                                                          NLWAAQRYGRELRRMSDEFEGSFKGL
                                                          NVWIVELQGMRFLHVPDTFEGHFQGV
                                                                                           9; Conservative
                                                                                                                                                                                                                                                                                                    IPR002035;
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595
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308
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263
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578
702
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55
                 STANDARD;
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                                                                                                                                  N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
N-LINKED (GLCNAC...)
CHONDROITIN 4-SULFATE, (GYNAC...)
(BY SIMILARITY).
V-> Y (IN REF. 2).
E-> I (IN REF. 2).
MW; CA8BF565458E7B2E CRC
                                                                                         score 54; DB 1
pred. No. 2.6;
5; Mismatches
                                                                                                                                                                                                            POTENTIAL.
BY SIMILARITY.
INTER-ALPHA-TRYPSIN 1
H2.
BY SIMILARITY.
VWFA.
                                                                                           5.
                 PRT;
                                                           237
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                  946
                                                                                                            DB 1;
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                                                                                                          Length 946;
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Matches 9
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STRAIN-C57BL/6N; TISSUE-Liver;
STRAIN-C57BL/6N; TISSUE-Liver;
FRAGUE-7534067;
Raquenez G
                                                                                                                                                                                CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-95194326; PubMed-7534067;
MEDLINE-95194326; PubMed-7534067;
Chan P., Risler J.-L., Raguenez G., Salier J.-P.;
The three heavy-chain precursors for the inter-alpha-inhibitor family in mouse: new members of the multicopper oxidase protein family in mouse: new members of the multicopper oxidase protein with differential transcription in liver and brain.";
Biochem. J. 306:505-512(1995).
INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH ESSENTIAL TO CELLS UNDERGOING BIOLOGICAL PROCESSES (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inter-alpha-trypsin chain H2).
ITIH2.
                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002035; v
Pfam; PF00092; vwa; 1.
SMART; SM00327; VWA; 1
PROSITE; PS50234; VWFA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Inter-alpha-trypsin inhibitor heavy chain H2
                                                                                                                                     SEQUENCE
                                                                                                                                                                  BINDING
                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; X70392; CI
MGD; MGI:96619;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation \cdot
                                                                                                                                                                                                                                            PROPEP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY).

1: SIMILARITY: BELONGS TO THE ITIH FAMILY.

1: SIMILARITY: CONTAINS 1 VWFA DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-10090;
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 212
                            \vdash
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: I-ALPHA-I PLASMA PROTEASE INHIBITORS ARE ASSEMBLED FROM ONE OR TWO HEAVY CHAINS (H1, H2 OR H3) AND ONE LIGHT CHAIN, BIKUNIN. INTER-ALPHA-INHIBITOR (I-ALPHA-I) IS COMPOSED OF H1, H2 AND BIKUNIN, INTER-ALPHA-LIKE INHIBITOR (I-ALPHA-L1) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-1) OF H3 AND BIKUNIN. TISSUE SPECIFICITY: EXPRESSED IN BOTH LIVER AND BRAIN PTM: HEAVY CHAINS ARE INTERLINKED WITH BIKUNIN VIA A CHONDROITIN A SULFATE BRIDGE TO THE THEIR C-TERMINAL ASPARTATE (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY).
 NVWIIEPQGMRFLHVPDTFEGHFQGV
                              NLWAAQRYGRELRRMSDEFEGSFKGL
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                                                                                                                                                                                                                                                                                                                                   inhibitor;
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Pred. No.
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N-LINKED (GLCNAC. . .)
N-LINKED (GLCNAC. . .)
CHONDROITIN 4-SULFATE,
                                                                                                                                                                                                                             VWFA.
                                                                                                                                                                                                                                         BY SIMILARITY.
                                                                                                                                                                                                                                                                                       POTENTIAL.
BY SIMILARITY
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                                                                                                                                                   (BY SIMILARITY
                                                                                                                                                                                                                                                                       INTER-ALPHA-TRYPSIN
   237
                              26
                                                             Mismatches
                                                                                                                                       40DB6716433ED9DC CRC64;
                                                                         DB 1;
3.7;
                                                                                                                                                                                                                                                                                                                                    Multigene
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                                                                                      Length 946;
                                                                                                                                                                                                                                                                          INHIBITOR HEAVY CHAIN
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) (POTENTIAL).
) (POTENTIAL).
CROSS-LINK SI
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                                                             Gaps
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RESULT 6
AROG_YEAST
    MEDLINE=92225349; PubMed=1348717; Kuenzler M., Paravicini G., Egli C., Irniger S., Braus G.H.; *Cloning, primary structure and regulation of the ARO4 gene, encoding the tyrosine-inhibited 3-deoxy-D-arabino-heptulosonate-7-phosphate synthase from Saccharomyces cerevisiae.*; Gene 113:67-74(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AROG_YE
P32449;
                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=94078675; PubMed=8256522;
Doignon F., Biteau N., Aigle M., Crouzet M.;
The complete sequence of a 6794 bp segment located on of chromosome II of Saccharomyces cerevisiae. Finding c dUTPase in a yeast.";
Yeast 9:1131-1137(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes.
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-1993 (Rel. 27, Created)
01-FEB-1994 (Rel. 28, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Phospho-2-dehydro-3-deoxyheptonate aldolase, tyrosine-inhibited
(EC 4.1.2.15) (Phospho-2-keto-3-deoxyheptonate aldolase) (DAHP
synthetase) (3-deoxy-D-arabino-heptulosonate 7-phosphate syntha
                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/anndunce/or send an email to license@isb-sib.ch).
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                                                                                         EMBL; X61107; CAA43419.1; -.
EMBL; L20296; AAA65607.1; -.
EMBL; Z36118; CAA85212.1; -.
EMBL; S38185; S38185.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-S288C
                             HSSP; P00886; 1QR7.
HSSP; P00886; 1QR7.
SGD; S0000453; ARO4.
InterPro; IPR001785; DAHP_synth_1.
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SIMILARITY: BELONGS TO CLASS-I DAHP SYNTHETASE FAMILY.
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phosphate + H(2)0.
ENZYME REGULATION: INHIBITED BY TYROSINE
                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBL outstation:
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    Lyase; Multigene family.
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RA Salanobat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,
RA Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
RA Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
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RA Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetler F.,
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RA Wincker L., Drack H., Voss H., Holland R., Brandt P., Nyakatura G.,
RA Wincker L., Hornischer K., Kauer G., Loehnert T.-H., Nordsiek G.,
RA Vezzi A., Pornischer K., Kauer G., Loehnert T.-H., Nordsiek G.,
RA Conrad A., Hornischer K., Kauer G., Loehnert T.-H., Nordsiek G.,
RA Reichelt J., Scharfe M., Schoen O., Bargues M., Terol J., Climent J.,
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RA Reichelt J., Scharfe M., Flores M., Liguori R., Vitale D.,
Mannhaupt G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
Na Mayer K.F.X., Kaul S., Town C.D., Koo H.L., Tallon L.J., Jenkins J.,
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Floral homeotic protein APETALA3.
AP3 OR AT3GS4340 OR T12E18_30.
Arabidopsis thaliana (Mouse-ear cress).
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MEDLINE-95036018; PubMed-7948893;
MEDLINE-95036018; PubMed-7948989; PubMed-7948893;
MEDLINE-95036018; PubMed-7948989; PubMed-7948989; PubMed-7948989; PubMed-794899; PubMe
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Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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MEDLINE=99126449; PubMed=9927474;
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in petals and stamens
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EMBL; D21125; BAA04665.1; ...
EMBL; D21125; BAA04668.1; ...
EMBL; AF115799; AAD51889.1; ...
EMBL; AF115802; AAD51891.1; ...
EMBL; AF115802; AAD51891.1; ...
EMBL; AF115801; AAD51993.1; ...
EMBL; AF115811; AAD51900.1; ...
EMBL; AF115814; AAD51900.1; ...
EMBL; AF115814; AAD51903.1; ...
EMBL; AF115814; AAD51903.1; ...
EMBL; AF115814; AAD51903.1; ...
EMBL; AF115814; AAD51903.1; ...
EMBL; AF15814; AAD51903.1; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rooney T., Rizzo M., Walts A., Utterback T., Fujii C.Y., Shea T.P., Creasy T.H., Haas B., Maiti R., Wu D., Peterson J., Van Aken S., Pai G., Militscher J., Sellers P., Gill J.E., Feldblyum T.V., Preuss D., Lin X., Nierman W.C., Salzberg S.L., White O., Venter J. Fraser C.M., Kaneko T., Nakamura Y., Sato S., Kato T., Asamizu E., Sasamoto S., Kimura T., Idesawa K., Kawashima K., Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A., Muraki A., Nakayama S., Nakazaki N., Shinpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M., Tabata S.; Wada T., Watanabe A., Yamada M., Yasuda M., Tabata S.;
                                                                                                                                                                                                                                                               CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                TRANSPAC: T01775; K-box.
Interpro; IPR00210; MADS-box.
Interpro; IPR00210; MADS-box.
Pfam; PP01486; K-box; 1.
Pfam; PF00319; SRF-TF; 1.
PRINTS; PR00404; MADSDOMAIN.
SWART; SM00432; MADS; 1.
PROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS00365; MADS_BOX_2; 1.
PROSITE; PS00365; MADS_BOX_2; 1.
RMUC_PSEAE
Q914U3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. Thatics are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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-1- FUNCTION: TRANSCRIPTION FACTOR INVOLVED IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Sequence and analysis of chromosome thaliana.";
                                                                                                                                                                                                                                                                                                   DOMAIN
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                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                        107
                                                                                                                                                                                           Local Similarity
                                                                                                                                        σ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: CONTAINS A PROBABLE DIMERIZATION DOMAIN FOUND IN SRF-TYPE TRANSCRIPTION FACTORS (K-BOX).
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232
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3 57
93 165
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                 STANDARD;
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165 K-BOX.
199 A -> R (IN REF. 2)
27341 MW; 669070319F9857C3
                                                                                                                                                                                           37.0%;
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                                                                                                                                                                                         Score 51; 1
Pred. No. 1
                  PRT;
                                                                                                                                                                          Mismatches
                 453
                                                                                                                                                                                       DB
                                                                                                                                                                                                            ;
                                                                                                                                                                                                          Length 232;
                                                                                                                                                                                                                                                                 CRC64;
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                                                                                                                                                             Caps 1;
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P22280;
O1-AUG-1991 (Rel. 19, Cr
O1-AUG-1991 (Rel. 19, Lr
O1-AUG-2000 (Rel. 39, Lr
Ras-like protein 3.
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Best Local
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Nature 406:959-964(2000).

-i- FUNCTION: Involved in DNA recombination (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RHIRA
                                              Casale W.L., McConnell D.G., Wang S.-Y., Lee Y. Expression of a gene family in the dimorphics the which exhibits striking similarity to human ras Mol. Cell. Biol. 10:6654-6663(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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01-MAR-2002 (Rel. 41,
01-MAR-2002 (Rel. 41,
                                                                                                                                                    STRAIN-ATCC 1216B;
MEDLINE-91061774; PubMed-1701021;
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STRAIN-ATCC 15692
MEDLINE-20437337;
                                                                                                                                                                                                                                                                                                             Eukaryota;
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InterPro; IPR003798; DUF195.
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Bacteria; Proteobacteria;
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  REGULATION: ALTERNATE BETWEEN AN INACTIVE FORM BOUND ACTIVE FORM BOUND TO GTP. ACTIVATED BY A GUANINE
                                                                                                                                                                                                                                                                                                        racemosus (Mucor circinelloides
Fungi: Zygomycota; Zygomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                453 AA;
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41, Last annotation update)
protein rmuC homolog.
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201 COILED COIL (POTENTIAL).
51539 MW; 1E7EA97E82EC5E4B CRC64;
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Pred. No. 6
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Mucorales; Mucoraceae;
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                                                                                                c fungus
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D.J., Lagrou M.
n S., Yuan Y.,
K., Lim R.M.,
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RESULT
6PGL_TH
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Best Local S
Matches 10
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Melson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,
Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,
Haft D.H., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,
McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,
Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,
Heidelberg J., Sutton G.G., Fleischmann R.D., Elsen J.A., White O.,
Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;
Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;
Syldence for lateral gene transfer between Archaea and Bacteria from genome sequence of Thermotoga maritima.";
Nature 399:323-329(1999).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Thermotoga maritima.
Bacteria; Thermotogales;
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PRINTS; PR00449; RASTRN
SMART; SM00173; RAS; 1.
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HSSP; P01112; 1PLL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nterPro; IPR003577; Ras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10 RELRRMSDEFEGSFKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OR DEVB OR TM1154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE SMALL GTPASE SUPERFAMILY. RAS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUCLEOTIDE-EXCHANGE FACTOR (GEF) AND INACTIVATED BY A GTPASE-ACTIVATING PROTEIN (GAP).
SUBCELLULAR LOCATION: PLASMA MEMBRANE.
                                                 phospho-D-gluconate.
PATHWAY: SECOND STEP IN PENTOSE PHOSPHATE PATHWAY
                                                                                                CATALYTIC ACTIVITY: 6-phospho-D-glucono-1,5-lactone
                                                                                                                              PHOSPHOGLUCONATE.
                                                                                                                                                    FUNCTION: HYDROLYSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GERMLING
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 THEMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IPR001806; Ras_trnsfrmng
0071; ras; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                          MSG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
BELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6-PHOSPHATE AMILY. 6-PHOSPHOGLUCONOLACTONASE SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RASTRNSFRMNG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           40,
                                                                                                                                                                                                                                                                                                                                                                                                                                          3109;
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125
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GTP (BY SIMILARITY).
GTP (BY SIMILARITY).
GTP (BY SIMILARITY).
GTP (BY SIMILARITY).
EFFECTOR REGION (PROBABLE).
FARNESYL (BY SIMILARITY).
08 MW; DBF086466F090F50 CRC64;
                                                                                                                                                       OF 6-PHOSPHOGLUCONOLACTONE TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sequence update)
annotation update)
(EC 3.1.1.31) (6PGL).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 48; DB 1; Pred. No. 3.8; 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 205;
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Best Local S
Matches 8
  BINDING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EM the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by and entitles requires a license agreement (See http://www.isb-s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAR-2002 (Rel. 41,
01-MAR-2002 (Rel. 41,
01-MAR-2002 (Rel. 41,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           THRC_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOLTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR000457; Glucosamino Pfam; PF01182; Glucosamino iso; Hydrolase; Complete proteome.
                                               CHAIN
                                                                                                                                                                                                                                                        use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Casazza P., Kaiser S., Willmitzer L., "ISOLAtion and characterization of a from Solanum tuberosum"; submitted (AUG-1998) to the EMBL/GenBa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Threonine synthase,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9MT28;
                                                                                                                                                                                     EMBL; AF082894; AAF74984.1; -. InterPro; IPR001926; B6_enzyme_beta
                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN the European Bioinformatics Institute. There are no restuse by non-profit institutions as long as its content
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 or send an email to license@isb-sib.ch).
                                                                     Chloroplast;
TRANSIT
                                                                                                                    Threonine
                                                                                                                                        Pfam; PF00291;
PROSITE; PS001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-4113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           111 ACEKYEREIRSATDQFDLAILGM 133
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               PATHWAY: Threonine biosynthesis; la
SUBUNIT: Homodimer (By similarity).
SUBCELLULAR LOCATION: Chloroplast (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          phosphate.

COFACTOR: Pyridoxal phosphate (By similarity).

ENZYME REGULATION: Allosterically activated by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mitted (AUG-1998) to the EMBL/GenBank/DDBJ databases. CATALYTIC ACTIVITY: O-phospho-L-homoserine + H(2)O -
                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENZYME REGULATION: Allosterically methionine (SAM) (By similarity). PATHWAY: Threonine biosynthesis:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOLTU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Conservative
                                                                                                                                             PS00165;
                                                                                                                  biosynthesis; Lyase;
  196
519 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Complete proteome.
220 AA; 25325 MW;
                                                                          Transit peptide.
                                                                                                                                                                 PALP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                           DEHYDRATASE_SER_THR;
519
196
57412 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chloroplast precursor
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation updat
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  CHLOROPLAST (BY SIMILARITY).
THREONINE SYNTHASE.
PYRIDOXAL PHOSPHAYE (BY SIMILARITY).
; 114C0979CD231464 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                  Pyridoxal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9B0FD07EE01E60C3 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cDNA enco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              last step
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                            moved. Usage by and for (See http://www.isb-sib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (By similarity)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Embryophyta; Tracheophyta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DΒ
                                                                                                                  phosphate; Allosteric enzyme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1;
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                                                                                                                                                                                                                                                                                                     Usage
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RX MEDLINE-2000348B; pubmed-10617198;
RX MEDLINE-2000348B; pubmed-10617198;
RA Mayer K.F.X., Schweller C., Wambutt R., Murphy G., Volckeert G.,
RA Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M.,
RA Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M.,
RA Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M.,
RA Weichselgartner M., de Simone V., Obermaler B., Mache R., Mueller M.,
RA Weichselgartner M., de Simone V., Obermaler B., Mache R., Mueller M.,
RA Kreis M., Delseny M., Puigdomench P., Watson M., Schmidtheini T.,
RA Kreis M., Delseny M., Puigdomench P., Watson M., Schmidtheini T.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Langham S.-A., McCullagh B., Bilham L., Robben J.,
RA Wiltzenegger T., Bothe G., Ramsperger U., Hilbert H., Braun M.,
RA Holzer E., Brandt A., Petters S., van Staveren M., Dirkse M.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA Mooijman P., Klein Lankhorst R., Rose M., Hauf J., Koetter P.,
RA De Keyser A., Buysshaert C., Gleien J., Villarroel R., De Clercq R.,
RA Pettett A., Rajandream M.-A., Lyne M., Benes V., Rechman S.,
RA Pettett A., Rajandream M.-A., Lyne M., Benes V., Rechman S.,
RA Pettett A., Rajandream M.-A., Lyne M., Benes V., Rechman S.,
RA Dose S., de Haan M., Maarse A.C., Schaefer M., Mueller A., Weyes R.,
RA Massenet O., Quijey F., Clabauld G., Muendlein A., Feiber R.,
RA Massenet O., Ouijey F., Clabauld G., Muendlein A., Feiber R.,
RA Massenet O., Ouijey F., Clabauld G., Muendlein A., Feiber R.,
RA Heijnen L., Schwarz S., Schmidt W., Lecharny A., Aubourg S.,
RA Heijnen L., Schwarz S., Schmidt W., Lecharny A., Aubourg S.,
RA Heijnen L., Schwarz S., Scholler P., Heber S., Francs P., Bielke C.,
RA Heijnen L., Schwarz S., Scholler P., Heber S., Francs P., Bielke C.,
RA Heijnen L., Bense D., Lemcke M., Haber M., Habermann K.,
RA Langham S., Argiriou A., Schott R., Johnson D.,
RA Kreiser J., Schott R., Schott R., S
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=CV. Wassilewskija;
MEDLINE=99418329; PubMed=10490396;
Bartlem D., Tamaki Y., Waito S.;
"Genomic nucleotide sequence of the Arabidopsis threonine synthase •. gene.":
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Query Match Best Local

Similarity 12; Conser

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Score 48; DB pred. No. 11; 6; Mismatches

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                    pfam; PF00291; PALP; 1.

PROSTTE; PS00165; DERYDRATASE_SER_THR; 1.

Threonine biosynthesis; Lyase; Pyridoxal phosphate; Allosteric enzyme; Chloroplast; Transit peptide; 3D-structure.

Chloroplast; Transit peptide; 3D-structure.

1 40 CHLOROPLAST.

TRANSIT 1 526 THERONINE SYNTHASE.

BINDING 203 203 PYRIDOXAL PHOSPHATE.

CONFLICT 2 2 2 A -> L (IN REF. 3).

CONFLICT 2 2 2 A -> L (IN REF. 3).
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1. COFACTOR: Pyridoxal phosphate.

1. ENZYME REGULATION: Allosterically activated up to 20-fold by S-adenosyl-methionine (SAM).

1. PATHWAY: Threonine biosynthesis; last step.

1. SUBUNIT: Homodimer.

1. SUBCELLULAR LOCATION: Chloroplast.

1. SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AB027151; BAA77707.1; -. EMBL; AL050352; CAB43659.1; -. EMBL; AL161575; CAB79742.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 41-526 PubMed=11344332;
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      THREONINE SYNTHASE.

PYRIDOXAL PHOSPHATE.

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043521; 043522;
16-OCT-2001 (Rel. 40, Create:
16-OCT-2001 (Rel. 40, Last s:
16-OCT-2001 (Rel. 40, Last a:
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BCL2L11 OR BIM.
FMR2_ANTEL
Q16994;
16-OCT-2001
16-OCT-2001
01-MAR-2002
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EMBL; AF032458; AAC39594.1; -.
MIM; 603827; -.
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TISSUE-Peripheral blood, and spleen;
MEDLINE-98904360; PubMed-9430630;
O'Connor L., Strasser A., O'Reilly L.A., Hausmann G., Adams J.M.,
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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PROSITE; PS01259; BH3; FALSE_NEG.
PAPOPLOSIS; Alternative splicing; Membrane.
DOMAIN 148 162
BH3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2 PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BEL-1, AND BHRF-1, DOES NOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BOX, BAX OR BAK (BY SIMILARITY).

SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALTERNATIVE PRODUCTS: 2 ISOFORMS; BimEL BimL; ARE PRODUCED BY ALTERNATIVE SPLICE
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  (Rel. 40, Created)
(Rel. 40, Last sequence update)
(Rel. 41, Last annotation updat
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                                                                                                     STANDARD;
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22171 MW;
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annotation update)
interacting mediator of cell death).
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Catarrhini; Hominidae
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update)
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schmutzler C., Darmer D., Diekhoff D., Grimmelikhuijzen C.J.P.;
"Identification of a novel type of processing sites in the precursor for the sea anemone neuropeptide Antho-RFamide (<Glu-Gly-Arg-Phe-NH2) from Anthopleura elegantissima."
J. Biol. Chem. 267:22534-22541(1992).
1- FUNCTION: NOT KNOWN BUT IT COULD ACT AS A TRANSMITTER AT NEURONUSCOLIAR SYNAPSES.
-!- SUBCELLULAR LOCATION: Secreted.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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MEDLINB-93054550; PubMed-1429603;
MEDLINB-93054550; PubMed-1429603;
Schmutzler C., Darmer D., Diekhoff D., Grimmellkhuijzen C.J.P.;
Schmutzler C., Darmer D., Diekhoff D., Grimmellkhuijzen C.J.P.;
Tdentification of a novel type of processing sites in the precursor for the sea anemone neuropeptide Antho-RFamide (<Glu-Gly-Arg-Phe-NH2)
from Anthopleura elegantissima.;
J. Blol. Chem. 267:22534-22541(1992).
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16-0CT-2001 (Rel. 40, Last annotation update)
Antho-RFamide neuropeptides type 1 precursor.
Anthopleura elegantissima (See anemone).
Eukaryota; Metazoa; Cnidaria; Anthozoa; Zoantharia; Actiniaria;
Nynantheae; Actinidae; Anthopleura.
NCBI_TaxID=6110;
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PIR; A26666; ECXAA.
PIR; A44308; A44308.
Interpro; IPR002544; FARP.
Pfam: PF01581; FARP; 13.
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Q919N2;
Q1-OCT-2000 (TIEMBLIEL 15, Created)
Q1-DEC-2001 (TIEMBLIEL 19, Last sequence update)
Q1-DEC-2001 (TIEMBLIEL 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                   Inohara N., Nunez G.;

Thohara N., Nunez G.;

"Genes with homology to mammalian apoptosis regulators identified gebrafish.";

celrafish.";

Cell Death Differ. 7:509-510(2000).

EMBL; AF231017; AAF66962.2;

EMBL; AF231017; AAF66962.2;

SEQUENCE 146 AA; 16546 MW; 28A5650BB5107ECB CRC64;
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Danio.
CNEI_TaxID-7955;
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MEDLINE=20373792; PubMed=10917738;
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89 LWAAKKYGQQLRRMSDEFDKGMK 111
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RESTRAIN-9378V;
RX KDDLINE-98295987; PubMed-9634230;
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RA GORDON S.V., Elgimeier K., Gas S., Berry C.E. III, Tekaia F.,
RA Badcock K., Basham D., Brown D., Chillingworth T., Connor R.,
RA Davics R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S.,
RA Davics R., Jagels K., Krogh A., McLean J., Moule S., Murchy L.,
RA Davics S., Osborne J., Quall M.A., Rajandram M.A., Rogers J.,
RA Oliver S., Osborne J., Quall M.A., Rajandram M.A., Rogers J.,
RA Sulston J.E., Taylor K., Whitehead S., Barrell B.G.,
RT Complete genome sequence.";
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RT Tuberculist; RV2014; -.
DR Tuberculist; RV2014; -.
DR Tuberculist; RV2014; -.
DR Plam: PF02371; Transposase_20; 1.

RF Pfam: PF02371; Transposase_20; 1.

RF Pfam: PF02371; Transposase_20; 1.

RF Pfam: PF02371; Transposase_20; 1.

SGOUENCE 223 AA: 24132 MW; 70456750017FEF37 CRC64:
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MOL BIOL EVOL 16:1037-1045(1999).

EMBL: AR143380; AAF25590.1; -.

HSSP: P11746: IMNM.

InterPro: IPR002487; K-box.

InterPro: IPR002100; MADS-box.

Pfam: PP01486; K-box; 1.

Pfam: PP01486; K-box; 1.

Pfam: PF00319; SRFTF; 1.

Pfam: PF00319; SRFTF; 1.

PFANTS: PR00404; MADSDOMAIN.

SMART; SM00432; MADS_BOX_2; 1.

PROSITE: PS50066; MADS_BOX_2; 1.
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Q9SEGO;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2000 (TrEMBLrel. 17, Last annotation update)
APETALA3 (PRAGKENT).
Arabidop9is lyrata.
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.

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MEDLINE-99404148; PubMed-10474900;
Lawton-Rauh A.L., Buckler E.S. IV, Purugganan M.D.;
"Patterns of molecular evolution among paralogous floral homeotic
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Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
NCBI_TaxID=1773;
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Pred. No. 5.4;
1; Mismatches
          A67CAE1EEBD8F7AA CRC64;
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O957Q3;
O1-MAY-2000 (TrEMBLrel. 1
O1-MAY-2001 (TrEMBLrel. 1
O1-JUN-2001 (TREMBLREL. 1
FLORAL HOMEOTIC PROTEIN A
PETALA3.
Q35Q22 PRELIMINARY: PRT: 232 AA.
Q95Q22; Q1-MAY-2000 (TIEMBLIEL 13, Created)
Q1-MAY-2000 (TIEMBLIEL 13, Last sequence update)
Q1-DEC-2001 (TIEMBLIEL 19, Last annotation update)
FLORAL HOMEOTIC PROTEIN AP3.
APETALA3.
APETALA3.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheop Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
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InterPro; IPR002100; MADS-box.
InterPro; IPR002100; MADS-box.
Pfam; PF01486; K-box; 1.
Pfam; PF00319; SRF-TF; 1.
PRINTS; PR00404; MADSDOMAIN.
SMART; SM00432; MADS; 1.
SMART; SM00432; MADS; BOX,1; 1.
PROSTITE; PS00350; MADS_BOX,2; 1.
PROSTITE; PS00350; MADS_BOX,2; 1.
DRA-binding; Nuclear protein; Transcription regulation.
DNA-binding; Nuclear Protein; Transcription CRC64;
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STRAIN-CV. GR-3, AND CV. CHI-1;

STRAIN-CV. GR-3, PubMed-9927474;

MEDLINE-99126449; PubMed-9927474;

Purugganan M.D., Suddith J.I.;

"Molecular population genetics of floral hand the genetics of Arabidopsis thaliana.";

Genetics 151:839-848(1999).
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Eukaryota, Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II: Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
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12; Conserv
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DOMAIN FAMILY OF TRANSCRIPTION FACTORS
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Pred. No. 11;
3; Mismatches
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Matches
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STRAIN-CY. KENT;

STRAIN-CY. KENT;

STRAIN-CY. KENT;

STRAIN-CY. KENT;

WEDLINE-99126449; Pubmed-9927474;

Purugganan M.D., Suddith J.I.;

SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).

-!- SIMILARITY: TO THE MADS DOMAIN FAMILY OF TRANSCRI

REMBL, ARI15805, AADS1894.1;

RESED. TITONOMAT. ELONGIT.
InterPro; IPRO02487; K-box.
InterPro; IPR002100; MADS-box.
InterPro; IPR002100; MADS-box.
Pfam; PF001485; K-box; 1.
Pfam; PF00319; SRF-TF; 1.
PRO175; PR00404; MADSDOMAIN.
SMART; SM00432; MADS_BOX_1; 1.
PROSITE; PS00350; MADS_BOX_2; 1.
DNA-binding; Nuclear protein Tran
DNA-binding; Nuclear Protein Tean
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STRAIN-CV. LI-8;

STRAIN-CV. LI-8;

STRAIN-CV. LI-8;

MEDLINE-99126449; PubMed-9927474;

PURUSGENIAM D., Suddith J.I.;

"Molecular population genetics of floral homeotic loci. Departures from the equilibrium-neutral model at the APETALA3 and PISTILLATA genes of Arabidopsis thaliana.";

Genetics 151:839-848(1999)
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Pfam: PP01319; SRP-TF; 1.
PFXWTS; PR00404; MADSSDOMAIN.
SMART; SW00422; MADS; 1.
SMART; SW00422; MADS; 1.
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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01-DEC-2001 (TrEMBLrel.
FLORAL HOMEOTIC PROTEIN
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InterPro; 1PR002487; K-box.
InterPro; 1PR002100; MADS-box.
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P11746; 1M
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TE; PS50066; MADS_BOX_2; 1.
Inding; Nuclear protein Transcription regulation
NCE 232 AA; 27267 MW; 42AB52D697E22A65 CRC64;
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AADS1890.1;
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Pred. No. 11;
3; Mismatches
        Transcription regulation 66976305B88B63E3 CRC64;
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RX MEDLINE-99126449; PubMed-9927474;

RA PURINGARIAN M.D. Suddith J.I.;

RA PURINGARIAN M.D. Suddith J.I.;

RA PURINGARIAN M.D. Suddith J.I.;

RA PURINGARIAN M.D. SUDDITION OF FLORE AND PROSTEE FOR The equilibrium-neutral model at the APETALA3 and PISTILLATA Genetics 151:839-848(1999).

RT Genetics 151:839-848(1999).

CC -!- SUDCELLULAR LOCAPION: NUCLEAR (BY SINILARITY).

CC -!- SUDCELLULAR LOCAPION: NUCLEAR (BY SINILARITY).

CC -!- SIDELLULAR LOCAPION: NUCLEAR (BY SINILARITY).

CC -EMBL, REI15805, AADS1895.1; -.

DR HSSP, P11746; IMMM.

DR HSSP, P11746; IMMM.

DR HSSP, P11746; IMMM.

DR FARM; PF00310; SRF-TP; 1.

DR PEAN: PF00310; SRF-TP; 1.

DR PEAN: PF00310; SRF-TP; 1.

DR PROSTEE; PS00303; MADS BOX 1; 1.
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Best Local
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Q9SQ19;
Q1-MAY-2000 (TrEMBLrel. 1
01-MAY-2000 (TrEMBLrel. 1
01-JUN-2001 (TrEMBLrel. 1
FLORAL HOMEOTIC PROTEIN APETALA3
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01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PLORAL HOMEOTIC PROTEIN AP3.
APETALA3.
APATALOSIS thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta:
Spermatophyta: Magnoliophyta; endicotyledons; core eucosids II; Brassicales; Brassicaceae; Arabidopsis.
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                                                                          Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; endicotyledons; core eudicots; Rosic
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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PROSITE; PS50066; MADS_BOX_2;
DNA-binding; Nuclear protein;
SEQUENCE 232 AA; 27342 MW;
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                                             NCBI_TaxID=3702;
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Pred. No. 11;
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Pred. No. 11;
3; Mismatches
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Transcription regulation.
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eudicots; Rosidae;
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SEQUENCE FROM N.A.

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O1-MAY-2000 (Tremblrel. 13
O1-MAY-2001 (Tremblrel. 13
O1-JUN-2001 (Tremblrel. 17
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"Molecular population genetics of floral homeotic loci. Departures from the equilibrium-neutral model at the APETALA3 and PISTILLATA genes of Arabidopsis thaliana.";
Genetics 151,839-848(1999).
HSSP, P1746; IMNM.
Interpro. Trong.
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SMART; SM00432; MADS; 1.
PROSITE; PS50066; MADS:BOX_2;
SEQUENCE 232 AA; 27369 MW;
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Eukaryotu; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnollophyta; eudloctyledons; core eudlocts; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
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InterPro; IPR002487; K-box.
InterPro; IPR00210; MADS-box.
InterPro; IPR00210; MADS-box.
IPfam: PF001486; K-box: 1.
Pfam: PF00149; SR-TF: 1.
PRINTS: PR00404; MADSDOMAIN.
SMART; SM00432; MADS: BOX.2; 1.
SEQUENCE 232 AA; 27311 MW; 71AE593FB8A67EC3
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InterPro; IPR002100; MAI
Pfam; PF01486; K-box; 1.
Pfam; PF00319; SRF-TF; 1
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FIGRAL HOMEOTIC PROTEIN #
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SEQUENCE FROM N.A.

STRAIN-CV. LISSE;

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X MEDLING-9912649; PubMed-9927474;

X MEDLING-9912649; PubMed-9927474;

X MEDLING-9912649; PubMed-9927474;

X MEDLING-9912649; PubMed-9927474;

Y "Molecular population genetics of floral homeotic loc:

I from the equilibrium-neutral model at the APETALA3 and

I genes of Arabidopsis thaliana.";

Cenetics 151:839-848(1999).

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1 -- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).

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FLORAL HOMBOTIC PROTEIN A
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheopseukaryota; Wagnoliophyta; eudicotyledons; core eudicots; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
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PROSITE; PS00350; MADS_BOX_1; 1.

PROSITE; PS00065; MADS_BOX_2; 1.

DNA-binding; Nuclear protein; Transcription regulation DNA-binding; Nuclear Protein; Transcription regulation SEQUENCE 232 AA; 27284 MW; 04FCFC55B73C7729 CRC64;
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Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

eurosids II, Brassicales; Brassicaceae; Arabidopsis.
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pred. No. 11;
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FLORAL HOMEOTIC F
Q9KGW3
                                                                                                                                                                   PRINTS; PR00404; MADSDOMAIN.

SMART; SM00432; MADS; 1.

PROSITE; PS00065; MADS_BOX_2; 1.

PROSITE; PS00066; MADS_BOX_2; 1.

DNA-binding; Nuclear protein; Transcription regulation.

DNA-binding; Nuclear protein; Transcription regulation.

SEQUENCE 232 AA; 27300 MM; 5CA05FD44F824DF0 CRC64;
                                                                                                                                                                                                                                                                    -!- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
-!- SIMILARITY: TO THE MADS DOMAIN FAMILY OF TRANSCRIPTION FACTORS,
EMBL; API15812; AAD51901.1; -.
HSSP; P11746; lMNM.
InterPro; IPR002487; K-box.
InterPro; IPR002100; MADS-box.
                                                                                                                                                                                                                                                                                                                                            "Molecular population genetics of floral homeotic | from the equilibrium-neutral model at the APETALA3 genes of Arabidopsis thaliana.";
Genetics 151:839-848(1999)...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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InterPro; IPR002487;
InterPro; IPR002100;
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protein Ap3.
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01-OCT-2000
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SEQUENCE
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MEDLINE=98343740; PubMed=9680146;
Wan Rensburg E.J., Engelbrecht S., Mwenda J., Laten J.D., Robson B.A.,
Van Rensburg E.J., Engelbrecht S., Mwenda J., Laten J.D., Robson B.A.,
Stander T., Chege G.K.;
"Similan immunodeficiency viruses (SIVs) from eastern and southern
Africa: detection of a SIVagm variant from a chacma baboon.";
J. Gen. Virol. 79:1809-1814(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O37056 PRELIMINARY; PRT 037056; O1-JAN-1998 (TrEMBLrel. 05, Creat 01-JAN-1998 (TrEMBLrel. 05, Last 01-DEC-2001 (TrEMBLrel. 19, Last ENVELOPE GLYCOPROTEIN (FRAGMENT).
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PROSITE; PS00641; COMPLEX1_75K.1: 1.
PROSITE; PS00642; COMPLEX1_75K.3; 1.
PROSITE; PS00643; COMPLEX1_75K.3; 1.
SEQUENCE 904 AA; 98157 MW; C25E84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Chimpanzee immunodeficiency virus (SIV(cpz)) (CIV) Viruses; Retroid viruses; Retroviridae; Lentivirus
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RA Shukla H.D., Lasky S.R., Ballya N.S., Thorsson V., Sbrogna J.,
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01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-OCT-2001 (TrEMBLrel. 18, Last annotation update)
SPERMIDINE/PUTRESCINE ABC TRANSPORTER.
POTA2 OR VNC1871G.
Halobacterium sp. (strain NRC-1).
Archaea; Euryarchaeota; Halobacteriales; Halobacterium.
Halobacterium.
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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd

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28-FEB-2001 (first entry)

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                                                                                                WPI; 2000-679325/66
                                                                                                                                                                                                                                                                                                                                                                                                07-APR-1999;
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New peptide conjugates for modulating apoptosis or for inhibiting B

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                                                                                       Korsmeyer SJ
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The present sequence represents a human p15 BID polypeptide. p15 BID polypeptides have cell death agonist activity. Cell death mediated by tumour necrosis factor (TNF) and FAS signalling pathways includes the generation of p15 BID, which is translocated to the mitochondria where it exerts cell death agonist activity, probably by inducing release of cytochrome C. The p15 BID polypeptides are useful in methods for modulating death of a target cell. Mutants of p15 BID, comprising an inactivating mutation in the BH3 domain, are used in methods for inhibiting death of a target cell. Agents that specifically inhibit caspase cleavage of p22 BID at the p15 cleavage site are also useful for inhibiting death of a target cell.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human and murine p15 BID polypeptides with cell death agonist activity are produced by caspase cleavage of BID in cells undergoing FAS or tumour necrosis mediated cell death, useful as modulators of target cell death -
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          27;
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    135 AA;
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l Similarity
27; Conserv
                       ilarity 100.
Conservative
                            .0%;
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                       Score 137; L
Pred. No. 5.9
0; Mismatches
                       DB 21;
.9e-14;
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                                   Length
                       Indels
                       0;
                       Gaps
                       0;
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AAY84018 standard; protein;

AAY84018;

03-JUL-2000 entry)

Amino acid sequence 0f human variant of p15 BID polypeptide

p15 BID; ce cytochrome cell 9 death agonist; tumour necrosis factor; FAS signalling;

sapiens.

W0200011162-A1

02-MAR-2000

28-JUL-1999; 99WO-US16966

19-AUG-1998; 20-AUG-1998; 980S-0136879 980S-0137038

(UNIW ) UNIV WASHINGTON.

⋗ Korsmeyer SJ;

Human and murine p15 BID polypeptides with cell death agonist activity are produced by caspase cleavage of BID in cells undergoing FAS or tumour necrosis mediated cell death, useful as modulators of target ce cell

27; Fig 2B; 55pp; English

The present sequence represents a variant of p15 BID polypeptide. p15 polypeptides have cell death agonist activity. Cell death mediated by tumour necrosis factor (TNF) and FAS signalling pathways includes the generation of p15 BID, which is translocated to the mitochondria where it exerts cell death agonist activity, probably by inducing release of BID

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RESULT ALECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ъ
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The invention relates to a method for negative selection assay that comprises introducing a genetic library encoding putative cytotoxic agent into a population of target cells, plating the cells on a surface, collecting a subpopulation of the cells that disattach from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Region
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                                                                                                             Claim
                                                                                                                                                       Negative selection of cells for the identification cytotoxic agents -
                                                                                                                                                                                                                                                                                                                                                           15-FEB-2000;
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27; Conser
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89..97
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33..194
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55..56
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specifically claimed
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                                                                                                             English
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Bcl-2 homo
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Pred. No. 6.1
0; Mismatches
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matches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; BH3 interacting domain death agonist; BID; BCL-2 family; apoptosis; regulation; cell death; inflammation; cancer; arthritis; autoimmune disease; viral infection; lymphoproliferative.
The present sequence represents a BH3 interacting domain death agonist (BDD) protein given in the present invention. The protein, the DNA encoding it or antisense sequences can be used for preventing or treating a decreased apoptotic state of a cell. The decreased apoptotic state that is treated results from a disease such as cancer, viral infections, lymphoproliferative conditions, arthritis, inflammation and autoimmune diseases. Antibodies against the BHD protein can be used for detecting a BHD polypeptide in a cell or population of cell. The nucleic acid
                                                                                                                                                            \rm BH3 interacting domain death agonist polypeptide - used for treating decreased apoptotic conditions resulting from inflammation etc.
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                                                                                                                                Claim 3; Page 68-69; 118pp; English.
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DB; AAV22145.
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                                                                                                                                                                                                             This sequence represents the HIV-1 Tat 1 protein. The invention relates to a bcl homology domain 3 (BH3 domain), the invention relates to a bcl homology domain 3 (BH3 domain), derived from a propopotatic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions architics, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
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                                                                                                                                         Sequence
                                                                                                                                                                                             regulation.
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26-SEP-1997;
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27; Conservative
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llarity 100.0%;
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97US-0060133
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Pred. No. 8.9
D; Mismatches
Score 137; DB 20;
Pred. No. 8.9e-14;
; Mismatches 0;
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New isolated human genes and the secreted polypeptides they encode useful for diagnosis and treatment of e.g. cancers, neurological disorders, immune diseases, inflammation or blood disorders

This sequence represents a secreted human protein encoded by clone detailed in the descriptor line. The gene can be used fusion proteins by linking to the gene to a human immunoglobu

immunoglobulin

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Page 288-289; 385pp; English

Brewer Greene

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Duan R, Hu JS, Ruben SM,

Ebner R, Ferrie AM, Lafleur DW, Moore PA, , Shi Y, Young P;

Florence KA; Ni J, Olse

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The invention relates to 87 novel genes and their fragments (nucleic acid sequences: AAX00511-X00724; amino acid sequences AAW67807-W68004) which are useful for preventing, treating or ameliorating medical conditions can be diagnosed by determining the amount of the new polypeptides in a sample or by determining the presence of mutations in the new polynucleotides. Specific uses are described for each of the 80 polynucleotides. Specific uses are described for each of the 81 polynucleotides. Specific uses are described for each of the 81 polynucleotides.
The present sequence represents a human BID polypeptide. The specification describes pl5 BID polypeptides which have cell death agonist activity. Cell death mediated by tumour necrosis factor (TNF) and FAS signalling pathways includes the generation of pl5 BID, which is translocated to the mitochondria where it exerts cell death agonist activity, probably by inducing release of cytochrome C. The pl5 BID
                                                                                                                                                                                                                                                     Human and murine p15 BID polypeptides with cell death agonist activity are produced by caspase cleavage of BID in cells undergoing FAS or tumour necrosis mediated cell death, useful as modulators of target cell death.
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20-AUG-1998;
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      agonist
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The present sequence represents a BH3 interacting domain death agonist (BID) protein given in the present invention. The protein, the DNA encoding it or antisense sequences can be used for preventing or treating a decreased apoptotic state of a cell. The decreased apoptotic state that is treated results from a disease such as cancer, viral infections. Lymphoproliferative conditions, arthritis, inflammation and autoimmune diseases. Antibodies against the BID protein can be used for detecting a BID polypeptide in a cell or population of cell. The nucleic acid sequence and the BID protein can also be used for treating limmunodeficiency disease (including AIDS), sensecence, neurodegenerative disease, ischemic and reperfusion cell death, infertility and wound-healing. Primers derived from the nucleic acid encoding the BID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; BH3 interacting domain death agonist; BID; BCL-2 family; apoptosis; regulation; cell death; inflammation; cancer; arthriautoimmune disease; viral infection; lymphoproliferative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polypeptides are useful in methods for modulating death of a target cell. Mutants of p15 BID, comprising an inactivating mutation in the BH3 domain, are used in methods for inhibiting death of a target cell. Agents that specifically inhibit caspase cleavage of p22 BID at the p15 cleavage site are also useful for inhibiting death of a target cell.
                                                                                                                                                                                                      Claim 4; Page 69; 118pp; English.
                                                                                                                                                                                                                                    BH3 interacting domain death agonist polypeptide - used for treating decreased apoptotic conditions resulting from inflammation etc.
                                                                                                                                                                                                                                                                                     WPI; 1998-193546/17.
N-PSDB; AAV22146.
                                                                                                                                                                                                                                                                                                                                                                                               09-SEP-1996;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ch 100.0%; Score 137; DB 21; Similarity 100.0%; Pred. No. 8.9e-14; 27; Conservative 0; Mismatches 0;
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RESULT 11
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Matches 24
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                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                              auto1mmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Fig 4; 47pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel polynuclectide encoding a BBC3 protein which is useful for modulating apoptosis, especially in the treatment of cancer and autoimmune diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (CLON-) CLONTECH LAB INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    02-NOV-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mammalian Bid Bcl-2 homology domain 3 domain.
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                                                                                                                                                4 IIRNIARHLAQVGDSMDRSIPPGL 27
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ilarity 100.0%;
Conservative 0;
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        Peptide; 26
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Pred. No. 9.1e-14;
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     RESULT 1
AAW50273
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                                                                                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                                                                                                   The present invention describes an isolated or synthetic polypeptide CC (1) comprising a less than full length amino acid sequence of a mutant CC Bcl-XL/Bcl-2 associated cell death regulator polypeptide (BAD) or its CC fragment, which contains amino acid substitutions at Seril8 of a human CC BAD, Seril5 of a murine BAD (longer murine BAD) or Seril13 of a murine BAD (longer murine BAD) or Seril13 of a murine BAD, (I) has immunostimulant, neuroprotective, CC nootropic, antischaemic, vulnerary, cytostatic, antiviral, CC antiarthritic, antiinflammatory and immunosuppressive activities, and CC can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC polynucleotides can be used for screening candidate compounds and drugs for activity that promote cell survival or apoptosis. Other uses include inducing or inhibiting apoptosis in a cell. Candidate compounds inducting or inhibiting apoptosis in a cell. Candidate compounds cell immunodeficiency diseases, neurodegenerative diseases, ischaemic cell capture death, repertusion cell death, wound healing, cancer, viral infections, CC lymphoproliferative conditions, arthritis, infertility, inflammation and autolmmune diseases. The present sequence represents a Bol-family member or present invention.
                                                                                                                                                                                                                                   Query Match
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        AAW50273 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bc1-XL/Bc1-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiiral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seril3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unidentified.
                                                                                                                                                                                                                                                                                                                             Sequence
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                                                                                                                                                                                                                                                                                                                                                                        present invention
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                                                                                                                                                                                                                                     Similarity
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larity 100.0%;
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  peptide;
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                                                                                                                                                                                                     0; Mismatches
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Pred. No.
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RESULT 13
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AAA37015 10
AAA3370
AXX AAA3370
AX AAA3370
AX AAA3370
AX BC12 FEB
XX BC12 FEB
XX CYCLLA
KW CAYCLLA
KW CAYCLLA
KW APOPCICA
                                                                                                                                                                                                                                                                    Query Match
Best Local
                                                                                                                                                                                                                                                        Matches 22;
                                                                                                                                                                                                                                                                                                                                             The present sequence represents a BH3 interacting domain death agonist (BID) epitope given in the present invention. The protein, the DNA encoding it or antisense sequences can be used for preventing or treating a decreased apoptotic state of a cell. The decreased apoptotic state that is treated results from a disease such as cancer, viral infections, lymphoproliferative conditions, arthritis, inflammation and autoimmune diseases. Antibodies against the BID protein can be used for detecting a BID paypeptide in a cell or population of cell. The nucleic acid sequence and the BID protein can also be used for detecting disease (including AIDS), senescence, neurodegenerative disease, ischaemic and reperfusion cell death, infertility and wound-healing. Primers derived from the nucleic acid encoding the BID protein can be used for detecting/quantitating the protein and for detecting alterations in the nucleic acid encoding the BID protein can be used for detecting/quantitating the BID protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; BH3 interacting domain death agonist; BID; BCL-2 family; apoptosis; regulation; cell death; inflammation; cancer; arthritis; autoimmane disease; viral infection; lymphoproliferative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 24; 118pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BH3 interacting domain death agonist polypeptide - used for treating decreased apoptotic conditions resulting from inflammation etc.
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Cytostatic; neuroprotective; cardiant; Bcl-2 superfamily; apoptosis modulation; B cell
                                                    Bcl2 polypeptide BH3 domain peptide #15.
                                                                               28-FEB-2001
                                                                                                                               AAB37015 standard;
                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Korsmeyer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UNIW ) UNIV WASHINGTON.
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                                                                                                         AAB37015;
                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                         29 AA;
                                                                                                                                                                                                                                                        Conservative
                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9605-0706741
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                                                                                                                                 peptide;
                                                                                                                                                                                                                                               82.5%; L.
100.0%; Pr
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Pred. No. 6.9e-11;
anti-HIV; virucide; cerebroprotective;
BH3 domain; cell death agonist; Bad;
lymphoma/leukemia 2; cancer; prostate;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-APR-2000; 2000WO-US09352
 Mouse BID BH3
                           20-JUL-1998 (first entry)
                                                    AAW50264;
                                                                              AAW50264 standard; peptide;
                                                                                                                                                                                                                                                                    Sequence
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                                                                                                                                                                                                                                                                    AA;
 domain peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       9908-0128202.
                                                                                                                                                                                                             72.3%;
                                                                               32
                                                                                                                                                                                                 Score 99; DB 21;
Pred. No. 1.1e-08;
3; Mismatches 5;
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colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

New peptide conjugates for modulating apoptosis or for inhibiting ceil lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer

CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached cc to the N-terminus of the peptide, or a side chain of the peptide where ct the functional group of the side chain is NH2 or OH; Or NH.

CC when the R-X group is attached to the C-terminus of the peptide where correctly considered to the R-X group is attached to the C-terminus of the peptide, or a side chain functional group is COOH CC or COOHNE; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl cyclobentyl, cyclobayl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides ABBJOOL-BJTO58 represent examples co of the peptide portion of the conjugate. The peptides represent analogues of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC the BJJ domain of the cell death agonist Bad. The peptides conjugate is conjugate is conjugate is useful for modulating apoptosis in the cells of a subject, or for creversing B cell lymphoma/lenkenia 2 (Bcl-2) mediated blockage of apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 function. In particular, the peptide conjugate is useful for treating a conjugate afflicted with a cancer characterized by cancer cells that the express Bcl-2. The cancer includes prostate, colorectal, gastric, consisted apoptosis, e.g. neurodegenerative disorders, acquired increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is also useful for treating disorders, acquired increased apoptosis, e.g. neurodegenerative disorders, acquired

Length 27; Indels 0;

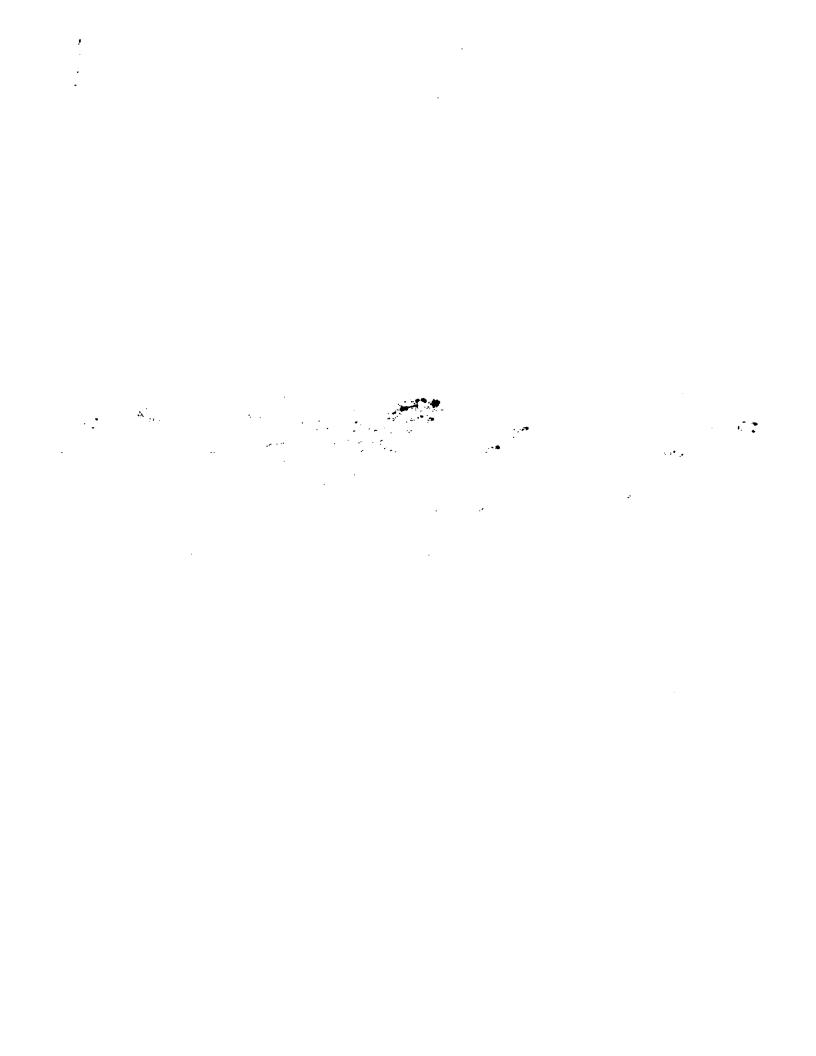
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Matches 19
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                                                                                                Mouse: BH3 interacting domain death agonist; BID; BCL-2 family; apoptosis; regulation; cell death; inflammation; cancer; arthritis; autoimmune disease; viral infection; lymphoproliferative.
12-MAR-1998
                                     MO9809980-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mouse: BH3 interacting domain death agonist; BID; BCL-2 family; apoptosis; regulation; cell death; inflammation; cancer; arthritis; autoimmune disease; viral infection; lymphoproliferative.
                                                                                                                                                                       Mouse BID truncated protein BID 74-106.
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                                                                                                                                                                                                                                                AAW50262;
                                                                                                                                                                                                                                                                              AAW50262 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BH3 interacting domain death agonist polypeptide - used for treating decreased apoptotic conditions resulting from inflammation etc.
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                                                                                                                                                                                                                                                                                                               15
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1 Similarity 70.4%;
19; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      32 AA;
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Pred. No. 1.3e-08;
3; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 32;
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Maximum Match 100%
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2: /cgn2_6/ptodata/2/laa/5B_COMB.pep:*

3: /cgn2_6/ptodata/2/laa/6B_COMB.pep:*

4: /cgn2_6/ptodata/2/laa/6B_COMB.pep:*

5: /cgn2_6/ptodata/2/laa/backfiles1.pep:*

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US-08-706-741B-5

US-08-706-741B-5

US-08-706-741B-3

US-08-706-741B-3

US-08-706-741B-3

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US-08-706-741B-6

US-08-706-741B-6

US-08-706-741B-8

US-08-706-741B-8

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Sequence 3, Appli
Sequence 4, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 7, Appli
Sequence 5, Appli
Sequence 33, Appl
Sequence 55, Appl
Sequence 55, Appl
Sequence 55, Appl
Sequence 56, Appl
Sequence 57, Appl
Sequence 51, Appl
Sequence 61, Appl
Sequence 63, Appl
Sequence 63, Appl
Sequence 65, Appl
Sequence 67, Appl
Sequence 67, Appl
Sequence 687, Appl
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US-09-136-879-3

Sequence 3, Application US/09136879B

Sequence 3, Application US/09136879B

PATEANT NO. 6326354

GENERAL INFORMATION:
APPLICANT: Gross, Atan
APPLICANT: KOZIMPGET, Stanley J.

TITLE OF INVENTION: MODDLATION OF APOPTOSIS WITH BID
FILE REFERENCE: 60296285Replacement
CURRENT APPLICATION UNMBER: US/09/136,879B

CURRENT FILING DATE: 198-08-19

NUMBER OF 58D ID NOS: 7

SEQ ID NO 35EQ ID NOS: 7

SEQ ID NO 35EQ ID NOS: 7

SEQ ID NO 35EQ ID NOS: 7

SEQ ID NO 35EQ ID NOS: 7

OKANISH: HOMO SAPIENS

US-09-136-879-3
                                                                                                     RESULT 2
US-09-136-879-4
US-09-136-879-4
Sequence 4, Application US/09136879B
Fatert No. 6326354
GENERAL INPOMNATION:
APPLICANT: Gross, Atan
APPLICANT: KOTSMEYER, Stanley J.
TITLE OF INVENTION: MODULATION OF APOPTOSIS WITH BIT
FILE REPERBNCE: 60296285Replacement
CURRENT APPLICATION NUMBER: USCAMENT
CURRENT APPLICATION NUMBER: USCAMENT
URBER OF SEQ ID NOS: 7
SOFTWARE: PATENTIN DATE: 1998-08-19
NUMBER OF SEQ ID NOS: 7
SOFTWARE: APALENTIN Ver. 2.0
SEQ ID NO 4
LENGTH: 140
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ORGANISM: Homo sapiens
-09-136-879-4
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1 Similarity 100.
27; Conservative
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US-08-706-741B-88
US-08-924-695A-88
US-08-924-695A-45
US-08-924-695A-45
US-08-924-695A-45
US-08-924-695A-8
US-08-924-695A-8
US-08-868-695A-8
US-08-868-695A-8
US-08-868-695A-8
US-08-868-695A-8
US-08-868-643-5
US-08-868-643-5
US-09-418-540-7
US-09-418-320-22
US-09-109-560-31
US-09-109-560-31
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Pred. No. 1.6
0; Mismatches
     Score
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     137;
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.6e-14;
s 0;
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     Length
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Best Local Similarity 100.0%; Pred. No. 1.7e-14; Matches 27; Conservative 0; Mismatches 0;

0; Gaps

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; TYPE: amino acid
; STRANDEDNESS:
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-706-741B-4
                                                                                                                                                                                                                                                                                                                          Ouery Match 100.0%;
Best Local Similarity 100.0%;
Matches 27; Conservative 0
                                                                                                                                                                            Sequence 4, Application US/08924695A Patent No. 5998583
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
                                                                                   NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS: HOWELL &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES: 88
CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 773 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
TRENT APPLICATION NUMBER: US/08/706,741B
FILING DATE: US-SEP-1946
TLANG DATE: US-SEP-1946
                                                                                                                                                                                                                                                                 STREET: 7733 FOR
CITY: ST. LOUIS
STATE: MISSOURI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 955017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ECOMMUNICATION INFORMATION:
ELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4, Application US/08706741B
5, 5955593
0SA
63105
                                       ST. LOUIS
MISSOURI
                                                                                                                              T: KORSMEYER,
INVENTION: B
                                                                  E: HOWELL & HAFERKAMP, L.C.
7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RORSMEYER, STANLEY J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION:
                                                                                                                              R, STANLEY J.
BH3 INTERACTING DOMAIN DEATH AGONIST
                                                                                                                 88
                                                                                                                                                                                                                                                                                                                          ; Score 137; DB 2;
; Pred. No. 2.5e-14;
0; Mismatches 0;
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APPLICANT: Gross, Atan

APPLICANT: Korsmeyer, Stanley J.

TITLE OF INVERVION: MODULATION OF APOPTOSIS WITH BID

FILE REFERENCE: 60296285Replacement
CUMRENT APPLICATION NUMBER: US909/136,879B
CUMRENT FILING DATE: 1998-08-19

NUMBER OF SEQ ID NOS: 7
SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 1
LENGTH: 195
TYPE: PRT
ORGANISM: Homo sapiens
: Sequence 5, Application US/08706741B
    Patent No. 5955533
    GENERAL INFORMATION:
    APPLICANT: KORSMEYER STANLEY J.
    TITLE OF INVERTION: BH3 INTERACTING DOMAIN DEATH AGONIST NUMBER OF SEQUENCES: 88
    CORRESPONDENCE ADDRESS
                                                                                                                                              RESULT 6
US-08-706-741B-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-924-695A-4
                                                                                                                                                                                                                                                                                                  Query Match 100.0%; Score 137; DB 4; Best Local Similarity 100.0%; Pred. No. 2.5e-14; Matches 27; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Patent No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.0%; Score 137, UB 2;
Best Local Similarity 100.0%; Pred. No. 2.5e-14;
Matches 27; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (314) 727-6092
INFORMATION FOR SEO ID NO: 4
SEQUENCE CHARACTERISTICS:
LENGTH: 195 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER US/08/924,695A FILING DATE: 09-8EP-1997 CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 97
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATIO SYSTEM. PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                         STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INFORMATION:
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ID NO: 4:
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                                                                                                                                                                                                                                                                                                                                          Length 195;
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CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
AATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96501
TELECOMMUNICATION INFORMATION:
TELECHNONE: (314) 727-5188
TELEPHONE: (314) 727-6092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 5, Application US/08924695A Patent No. 5998583 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
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                                  APPLICATION NUMBER: US/08/924
FILING DATE: 09-SEP-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9717
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION 1077-5188
  TELEPHONE: (31
TELEFAX: (314)
INFORMATION FOR SEQ
                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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LENGTH: 200 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: BH
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                                             CITY:
                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: HOWELL & HAFERKAMP, L.C. STREET: 7733 FORSYTH BLVD., SUITE 1400
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: MISSOURI
                                                                                                                                                                                                                                                                                                                       63105
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: MISSOURI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         h 100.0%; Score 137; DB 2; Similarity 100.0%; Pred. No. 2.6e-14;
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IVENTION: BH3 INTERACTING DOMAIN DEATH AGONIST
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4) /2,
1 727-6092
10: 5:
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US-08-924-695A-33
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                                                                                                      Query Match
Best Local Similarity 100.
Matches 22; Conservative
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Best Local Similarity
Matches 27; Conserv
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                    TELEFAX: (314) 727-609
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                          STRANDEDNESS:
TOPOLOGY: li
                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Relicurent Application Data:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear MOLECULE TYPE: protein
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LENGTH: 200 amino acids
TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 7733 FOR CITY: ST. LOUIS
                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: FILING DATE: 09-SE CLASSIFICATION: 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: U
ZIP: 63146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   79 QEDIIRNIARHLAQVGDSMDRSIPPGL 105
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                                                                                                                                                                                                                                                            TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: HOWELL & HAFERKAMP, L.C. STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                   TELEPHONE:
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                                                           1 RNIARHLAQVGDSMDRSIPPGL 22
                                                                           6 RNIARHLAQVGDSMDRSIPPGL 27
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5. 5955593
                                                                                                                                                                                                                                                        amino acid
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                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                   (314) 727-5188
                                                                                                                                                                                                          peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                     09-SEP-1996
                                                                                                                                                                                                                                                                                                                    727-6092
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100.0%; pr
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100.0%; Pr
.... 0;
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13 INTERACTING DOMAIN DEATH AGONIST
                                                                                                                   Score 113: DB 2: Length 29; Pred. No. 1.7e-11; 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                  965017
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Pred. No. 2.6e-14;
0; Mismatches 0;
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Sequence 33, Application US/08924695A Patent No. 5998583 GENERAL INFORMATION:

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US-08-706-741B-55
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Best Local Similarity 100.
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 55, Application US/08706741B Patent No. 5955593 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/08/924
FILING DATE: 09-SEP-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9717
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-518
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEPHONE: (314) 727-60 TELEFAX: (314) 727-60 INFORMATION FOR SEQ ID NO:
                                                                                                 ZIP: 63140
COMPUTER READABLE FORM:
COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATION DATA:
                                                                             SOFTWARE: Patentin Release #1.0, ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/706,741B
FILING DATE: 09-SEP-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
CORRENT APPLICATION DATA:
                                                  CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                             APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: BH3 INTERACTING DOMAIN DEATH AGONIST
NUMBER OF SEQUENCES: 88
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE CHARACTERISTICS:
LENGTH: 29 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
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CITY: ST.
STATE: MIS
                                                                                                                                                                                                                                                               CITY: ST.
STATE: MIS
REGISTRATION NUMBER: 35, REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY: 1
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                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                   HOLLAND, DONALD
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7733 FORSYTH BLVD., SUITE 1400
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NVENTION: BH3 INTERACTING DOMAIN DEATH AGONIST
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727-6092
) ID NO: 33:
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100.0%; Pr
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   965017
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Pred. No. 1.7e-1
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Patent No. 5998583
Pareral INFORMATION:
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                                                                          Query Match
Best Local
                                                          Matches
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Best Local Similarity
Matches 19; Conserv
                                                                                                                                                                                                      TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
LENGTH: 32 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 55:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IDM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                               TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/924,695A
FILING DATE: 09-5EP-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL &
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: KORSMEY TITLE OF INVENTION:
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CITY: ST.
STATE: MI
                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER:
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ZIP: 63105
                                                                         Local Similarity
                                                                                                                                                             TOPOLOGY:
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5 QEEIIHNIARHLAQIGDEMDHNIQPTL 31
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o. 5998583
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                                                          Conservative
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                                                                       72.38;
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                                                       ; Score 99; DB
; Pred. No. 3.3e
3; Mismatches
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RESULT

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Sequence 53, Application US/08706741B Patent No. 5955593 GENERAL INFORMATION:

KORSMEYER, STANLEY J

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; TOPOLOGY: 11; MOLECULE TYPE: US-08-706-741B-53
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (314) 727-5188
TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: LEM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
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LENGTH: 33 amino acids
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION:
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                                                                                                                                                                                                                                                                                                                  APPLICANT: KORSMEYER, STANLEY J
                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES:
                                                                                                                                                                                                       CITY:
STATE:
APPLICATION NUMBER: US/US APPLICATION NUMBER: US/US FILING DATE: 09-SEP-1997
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ZIP: 63146
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CITY: ST. LOUIS
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                                                                                                                                                                                    COUNTRY:
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6 QEEIIHNIARHLAQIGDEMDHNIQPTL 32
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MISSOURI
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7733 FORSYTH BLVD., SUITE 1400
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                                                                                                                                                                                                                                                                                                                  BH3 INTERACTING DOMAIN DEATH AGONIST
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                                       US/08/924,695A
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1 QEDIIRNIARHLAQVGDSMDRSIPPGL 27

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В
                                                                       ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-08-706-741B-56
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US-08-706-741B-56
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Query Match
Best Local Similarity
Matches 19; Conserv
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 56, Application US/08706741B Patent No. 5955593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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                                                                                                                                                                     TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: KORSMEYER
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 33 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: peptide
                                                                                                                                                     SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 96
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
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nes 19; Conserv
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                                                                                                               STRANDEDNESS:
                                                                                                                                                                                                                                        REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 63146
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: ST.
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                                                                                                                                                                                                                                                                                                                                                                                                                                   MISSOURI
                                                                                                                                       44 amino acids
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7733 FORSYTH BLVD., SUITE 1400
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       Conservative
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1727-6092
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BH3 INTERACTING DOMAIN DEATH AGONIST

88
                   72.3%;
70.4%;
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Pred. No. 3.4e
3; Mismatches
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                                                                                                                                                                                                                           965017
                   Score 99;
Pred. No.
       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3.4e-09;
5;
                   4.7e-09;
                                  DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 33;
       Indels
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       0;
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       Gaps
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17 QEEIIHNIARHLAQIGDEMDHNIQPTL 43

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RESULT 15
US-08-924-695A-56
US-08-924-695A-56
; Sequence 56, Application US/08924695A
; Patent No. 5998583
; GENERAL INFORMATION:
   APPLICANT: KORSMEYER, STANLEY J.
   APPLICANT: TOYENTION: BH3 INTERACTING DOMAIN DEATH AGONIST
   NUMBER OF SEQUENCES: 88
; CORRESPONDENCE ADDRESS:
   ADDRESSEE: HOWELL & HAFERKAMP, L.C.
   ADDRESSEE: T733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                               STREET: 7733 FORSYTH BLVD., SUITE 1400
CITY: ST. LOUIS
STATE: MISSOURI
COUNTRY: USA
ZIP: 63105
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/08/924,695A
FILING DATE: 09-SEP-1997
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 971798
TELECOMMUNICATION NUMBER: 971798
TELECOMMUNICATION NUMBER: 971798
TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 56:
SEQUENCE CHARACTERISTICS:
LENGTH: 44 amino acids
TYPE: amino acids
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: peptide
Search completed: September 20, 2002, 10:37:20 Job time: 408 sec
                                                                                                            В
                                                                                                                                                                                                                                                                                                          US-08-924-695A-56
                                                                                                                                                                                              Query Match 72.3%; Score 99; DB Best Local Similarity 70.4%; Pred. No. 4.71 Matches 19; Conservative 3; Mismatches
                                                                                                        1 QEDIIRNIARHLAQVGDSMDRSIPPGL 27
||:|| |||||||| || 1 :| | |
17 QEEIIHNIARHLAQIGDEMDHNIQPTL 43
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4.7e-09;
hes 5; Indels
                                                                                                                                                                                                  0;
                                                                                                                                                                                                    Gaps
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Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
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DB seq length: 2000000000
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                protein search, using sw model
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1: pir1:*
2: pir2:*
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Query
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T95002
T95061
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C:Species: Haemophilus influenzae
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 16-Jul-1999
C;Accession: F64095
R;Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage
F;Gocayne, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Keiley, J.M.; Weldman, O.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghagen, N.S.M.
Science 269, 496-512, 1995
A;Authors: Gnehim, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Vente
A;Althors: Gnehim, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Vente
A;Fitle: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd.
A;Reference number: A64000; MUID:95350630
A;Recession: F64095
A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-457 <TIGR>
A;Cross-references: GB:U32763; GB:L42023; NID:g1573817; PIDN:AAC22470.1; PID:g1573823
C;Superiamily: argininosuccinate lyase
C;Keywords: amidine-lyase; carbon-nitrogen lyase
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T435286
S226450
AG226450
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P60199
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U82735
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8; Indels Length 457;

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A:Molecule type: DNA
A:Rosicules: 1-849 <SIM>
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A:Rosicules: 1-849 <SIM>
A:Rosicules: 1-849 <SIM>
A:Rosicules: GB:AE003906; GB:AE003849; NID:g9105470; PIDN:AAF83418.1; GSPDB:GN001
A:Cross references: GB:AE003906; AFC Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.; A
A:Experimental source: strain 9a5c

R:Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.; A
Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer, B
Briones, M.R.S.; Bueno, M.R.P.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frohm
A:Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Krieger, J.E.; Kuramae, E.E.; Laigu
J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.E.; Kuramae, E.E.; Laigu
Chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marino, C.L.; Marques, M.V.; Martins, B
A:Authors: Martins, E.M.F.; Matsukuma, A.Y.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.Y.;
F.G.; Nunces, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D.R.
Rodrigues, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawasak
A:Authors: da Silva, A.G.; da Silva, F.R.; da Silva, M.A.; Silva, Jr., W.A.; da Silvai,
M.; Tsuhako, M.H.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almelda, S.; Vettore, A.L.; Zanterene number; A59328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mannosyltransferase xF0608 [imported] - Xylella fastidiose (strain 9a5c)
C;Species: Xylella fastidiose
C;Species: Xylella fastidiose
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
C;Accession: D82785
R;anonymous, The Xylella fastidiosa Consortlum of the Organization for Nucleotide Sequentature 405, 151-157, 2000
A;Tille: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MUID:20365717
A;Note: for a complete list of authors see reference number A59328 below
A;Status: preliminary
A;Status: preliminary
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-401 <SEE>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity 27.8
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;Gene: SCOEDB:SCH5.03c
                                                                                                                                                                                                                  Contents: annotation
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 37. 
Best Local Similarity 28. 
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352 EDALERLARGSTPESTLRRIEAVAACGEALDRNVPP 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6; Mismatches
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Pred. No. 3;
Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 48; DB 2;
Pred. No. 22;
8; Mismatches
48;
ВB
2
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Length
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                                       οy
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A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-416 <STO>
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A; Map position: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Genetics:
A;Gene: VC1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               밁
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Best Local S
Matches 9
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Best Local :
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Matches
                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                  Genetics
3 DIIRNIARHLAQVGDSMDRS 22
                                                                                                                     10; Conserv
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hypothetical protein F20P5.5 (imported) - Arabidopsis thaliana (C.Specles: Arabidopsis thaliana (mouse-ear cress) (C.Specles: Arabidopsis thaliana (mouse-ear cress) (C.Specles: Oz-Mar-2001) (C.Spe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
(202.182
hypothetical protein VC1577 [imported] - Vibrio cholerae (strain N16961 serogroup O1)
C;Species: Vibrio cholerae
C;Species: Vibrio cholerae
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
C;Date: 18-Aug-1802
C;Accession: G82182
C;Accession: G82182
R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R
R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R
chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; Sellers
L, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
Nature 406, 477-483, 2000
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A;Molecule type: DNA
A;Residus: 1-273 <HEID
A;Cross-references: GB:AE004235; GB:AE003852; NID:g9656082; PIDN:AAF94731.1; GSPDB:GN
A;Experimental source: serogroup Ol; strain N16961; biotype El Tor
A;Experimental source: serogroup Ol; strain N16961; biotype El Tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
A;Reference number: AB2035; MUID:20406833
A;Accession: C82182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              237 DDLSRNIAQDAQQLADMMQQAI 258
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Similarity 40.9%;
9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   similarity 26.5%;
9; Conservative
                                                                                                                                                                                                                                                                                                                                            GB: AE005173; NID: g2194119; PIDN: AAB61094.1; GSPDB: GN00141
                                             34.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 52;
9; Mismatches
     Score 47; DB 2;
Pred. No. 32;
6; Mismatches
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2
                                                                                     Length 416;
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     Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
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ν,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R.; K
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     1;
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ALCOSS Teferences: EMBL:X17298; NID:g8473; PIDN:CAA35185.1; PID:g8474
A. Note: the authors translated the codon CaG for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
A. Note: the authors translated the codon CaG for residue 202 as Glu, TCT for residue 369
                                                                                                                                                                                                                                                                                                                                                      A,Cross references: GB:AE003858; GB:AE003849; NID:g9104799; PIDN:AAF82855.1; ĠSPDB:GN001 A,Experimental source: strain 9a5c R; Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.; Asriones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer, F. as-Neto, E.; Docena, C.; El-Dorry, H.; Facincani, A.P.; Ferreira, A.J.S.; submitted to GenBank, June 2000

A,Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frohm J.D.; Jungueira, M.L.; Kemper, E.L.; Kitajina, J.P.; Krieger, J.E.; Kuramae, E.E.; Laigi chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.F.; Marrino, C.L.; Miracca, E.C.; Miyaki, C.Y.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; Goliveira, R.C.; Palmieri, D.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Rosa, T.V. E.; de Sa, R.G.; Santelli, R.V.; Sawasak, A, Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva Jr., W.A.; da Silveira, M.; Tsuhako, M.H.; Validada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; Z., R.F.; Asilvada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; Z., R.F.; Asilvada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; Z., R.F.; Asilvada, R.C.; As
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C;Superfamily: DNA-directed RNA polymerase 132K polypeptide
C;Keywords: DNA binding; nucleotidyltransferase; nucleus; transcription; zinc
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A82856
A82856
conserved hypothetical protein XF0042 [imported] - Xylella fastidiosa (strain C;Species: Xylella fastidiosa
C;Species: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Accession: A82856
R;Anonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Nature 406, 151-157, 2000
A;Title: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MUID:20365717
A;Note: for a complete list of authors see reference number A59328 below A;Accession: A82856
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A; Residues: 1-420 <SIM>
A; Cross-references: GB:
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A;Introns: 30/3; 530/3
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         Query Match
Best Local S
Matches 8
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                                        36.4%;
Score 46.5; I
Pred. No. 39;
7; Mismatches
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Pred. No. le+02;
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. M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utt.
S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.
Science 286, 1571-1577, 1999
A., Title: Genome sequence of the radioresistant bacterium Deil
A; Reference number: A75250; MUID:20036896
A; Accession: G75293
A; Status: preliminary
A; Molecule type: DNA
A; Residues: 1-268 <WHI>
A; Cross-references: GB:AE002060; GB:AE000513; NID:g6460082; LA; Experimental source: strain R1
C; Genetics: A; Gene: DR2283
A; Map position: 1
C; Superfamily: conserved hypothetical protein H10360
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A;Reference number: 874322; MUID:97061201
A;Accession: S75802
A;Status: nucleic acid sequence not shown; trans
A;Molecule type: DNA
A;Residues: 1-159 <KAN>
A;Cross-references: EMBL:D64003; GB:AB001339; NI
A;Note: the nucleotide sequence was submitted to
C;Genetics:
A;Gene; kdtB
A;Start codon: GTG
C;Superfamily: lipopolysaccharide core biosynthe
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N;Alternate names: protein s1r0847

C;Speciles: Synechocystis sp.
A;Variety: PCC 6803

C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000

C;Accession: S75802

C;Rotes: 57-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 20-Jun-2000

C;Accession: S75802

C;Acce
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Similarity 33.3%;
7; Conservative
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T.; Zalewski,
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RESULT 11
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C; Date: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC A; Note: Anabaena sp. (strain PCC 7120) is a synonym of Nostoc sp. strain PCC C; Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change i1-Jan-2002 C; Accession: AP2445
C; Accession: AP2445
R; Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.
DNA Res. 8, 205-213, 2001
DNA Res. 8, 205-213, 2001
hypothetical protein AT4910730 [imported] - Arabidopsis thaliana (Speciles: Arabidopsis thaliana (mouse-ear cress) C:Speciles: Arabidopsis thaliana (mouse-ear cress) C:Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 16-Feb-2001 C:Accession: B85112 Arabidopsis Genome Sequencing Consortium, The Cold: R:Anonymous, The European Union Arabidopsis Genome Sequencing Consortium, The Cold: Nature 402, 769-777, 1999
A:Title: Sequence and analysis of chromosome 4 of the plant Arabidopsis thaliana. A:Reference number: A85001; MUID:20083488
A:Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Petrovics, G.; Putnoky, P.; Kondorosi, A. submitted to the EMBL Data Library, January 1992 A;Description: A fatty acid synthase like gene cluster of Rhizobium meliloti is A;Reference number; S18953 A;Accession: S18954
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-395 <PET>
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S1854
fix23-2 protein - Rhizobium meliloti
fix23-2 protein - Rhizobium meliloti
C;Species: Rhizobium meliloti
C;Date: 20-Feb-1995 *sequence_revision 20-Feb-1995 *text_change 08-Oct-1999
C;Date: 30-Feb-1995 *sequence_revision 20-Feb-1995 *text_change 08-Oct-1999
C;Accession: S18954
C;Accession: S18954
R;Petrovics, G.; Putnoky, P.; Kondorosi, A.
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C;Superfamily: stress response protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AF2445
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A; Residues: 1-329 < KUR>
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9; Conservative
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A;Cross-references: (C;Genetics: A;Gene: AT4g10730 A;Map position: 4
                                                                                                                        A:Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues; 1-1237 cCHO>
A;Cross-references: GB:S45791; NID:9256659; PIDN:AAB23488.1; PID:9256660
A;Cross-references: New Zealand White rabbit, ileal epithelial cells
A;Experimental source: New Zealand White rabbit, ileal epithelial cells
A;Note: Sequence extracted from NCBI backbone (NCBIN:115180, NCBIP:11518
A;Note: Sequence extracted from NCBI backbone (NCBIN:115180, NCBIP:11518)
                                                                                                                                                                                                                                                                         A;Chow, A.; Dobbins, J.W.; Aronson, P.S.; Igarashi, P. Am. J. Physiol. 263, G345-G352, 1992
A;Title: cDNA cloning and localization of a band 3-related A;Reference number: A56764; MUID:93035730
                                                                                                                                                                                                                                                                                                                                                                       band 3-related protein, ileum - rabbit
C;Species: Oryctolagus cuniculus (domestic rabbit)
C;Date: 08-Sep-1995 #sequence_revision 08-Sep-1995
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A;Residues: 1-55 <SHI>
A;Residues: 1-55 <SHI>
C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase hom C;Keywords: ATP; phosphotransferase; tyrosine-specific protein kinase
F;1-55/Domain: protein kinase homology (fragment) <KIN>
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A:Accession: S18015
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FEBS Lett. 289,
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C;Species: Drosophila melanogaster
C;Date: 19-Mar-1997 #sequence_revision 01-Aug-1997 #text_change 18-Feb-2000
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A; Residues: 1-693 <STO>
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Search completed: September 20, 2002, 10:39:07 Job time: 479 sec

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Post-processing: Minimum Match 0%
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                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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## ALIGNMENTS

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T.	structure of BID, an intrace lular ampl	Salvesen G S Vuan I War	STRUCTURE BY NMR.		Genome Res. 5:214-224(1995).		"An expression-independent catalog of genes from human chromosome	.F., Buckler A.J.;	o -	961595	SEQUENCE OF 1-74.	( )	d (JUN-1996) to the EMBL/GenBank/DDBJ da		chinomius u cuanti M makaich	T., Hirano H., Hisnigaki	OF 1-110 FROM N.A.	1	(JUL-1995) to the EMBL/GenBank/D	., Waterston R., Williamson A., Wohl	Rohlfing T., Soares M., Tan F.,	3	SPECIFICE TO DESTRUCT TO THE TRANSPORT OF THE STATE OF TH		Genomics 51:472-475(1998).		lcated in cat eye syndrome chromosomes and to mouse chro	maps to the region of hu		FOOTS T K . Pitton B Minoshima S Asakawa S Shimizu N	SEQUENCE FXOM N.A.		Dev. 10:2859-2869(1996).	a novel BH3 domain only death agonist.";	Wang K. Yin XM. Chao D.T. Milliman C.L. Korsmever S.J.	WEDDITUE TO COM N.A. DITTO A BANK TO THE TOTAL TO THE TOTAL TO THE TOTAL TOTAL TO THE TOTAL TOTAL TO THE TOTAL TOTAL TOTAL TO THE TOTAL TO		D=9606;	rimates; Catarrhini; Hominidae;		Homo saciens (Human)	BHS INCERECTING WOMEN GEACH AGONISC (BID).	OCT-2001 (Rel. 40, Last annotation	(Rel. 35, Last		BID_HUMAN STANDARD; PRT; 195 AA.	HUMAN

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P70444;
01-NOV-1997
01-NOV-1997
16-OCT-2001
                                                                                 STRUCTURE BY NMR.

MEDLINE-99189748; PubMed-10089878;

MCDOnnell J.M., Fushman D., Milliman C.L., Korsme McDonnell J.M., Fushman D., Milliman C.L., Korsme "Solution structure of the proapoptotic molecule basis for apoptotic agonists and antagonists.";

Cell 96:625-634 (1999).

-1- FUNCTION: INDUCES CASPASES AND APOPTOSIS, COU
                                                                                                                                                                                                                                                                                                                                                                                         Genes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus (Mouse)
Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=97078762; PubMed=8918887;
Wang K., Yin X.-M., Chao D.T., Milliman C.L.,
"BID: a novel BH3 domain-only death agonist.";
Genes Dev. 10:2859-2869(1996).
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MIM; 601997;
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PROSITE; PS01259; BH3;
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-NOV-1997 (Rel. 35, La
-OCT-2001 (Rel. 40, La
3 interacting domain
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EFFECT OF
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SUBUNIT: FORMS HETERODIMENS EITHER WITH THE PRO-APOPTOTIC PROTEIN BAX OR THE ANTI APOPTOTIC PROTEIN BCL-2 (BY SIMILARITY).

SUBCELLULAR LOCATION: PREDOMINANTLY CTYPOPLASHIC (BY SIMILARITY).

SUBCELLULAR LOCATION: PREDOMINANTLY CTYPOPLASHIC (BY SIMILARITY).

DOMAIN: INTRACT BIJ DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD AND DOMAIN: THEAT BRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L; AF042083; AAC34365.1;
L; H23042; -; NOT_ANNOTATED_CDS.
L; R09650; -; NOT_ANNOTATED_CDS.
L; R09537; -; NOT_ANNOTATED_CDS.
L; C17508; -; NOT_ANNOTATED_CDS.
L; H55483; -; NOT_ANNOTATED_CDS.
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In death agonist (BID).
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Sciurognathi; Muridae;
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P44314;
01-NOV-1995
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MEDLINE-95350630; PubMed-7542800;

REDLINE-95350630; PubMed-7542800;

Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,

Rerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,

McKenney K., Sutton G., Fitzhugh W., Fields C.A., Googyne J.D.,

Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,

Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,

Witterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,

Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,

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01-NOV-1995 (Rel. 32, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation updat
Argininosuccinate lyase (EC 4.3.2.1) (Argin
                                                                         "Whole-genome random sequencing and assembly of infiltenzae Rd."; Science 269:496-512(1995).
-!- CATALYTIC ACTIVITY: N-(L-arginino)succinate
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STRAIN-RD / KW20 /
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NCB1_TaxID=727;
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InterPro; IPR000712; Bcl_2.
PROSITE; PS01259; BH3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Apoptosis; 3D-structure.
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SUBCELLULAR LCCATION: PREDOMINANTIX CYTOPLASMIC.
SUBCELLULAR LCCATION: PREDOMINANTIX CYTOPLASMIC.
DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAI DOWAIN: TOPACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAI BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR IN WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QEDIIRNIARHLAQVGDSMDRSIPPGL
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                                   THE
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  BELONGS TO
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21950 MW;
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Pred. No. 9
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  ARGININE
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.1) (Arginosuccinase) (ASAL).
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BIOSYNTHESIS.
FAMILY. ARGININOSUCCINATE
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9.5e-08;
                                                                                                                                                                                                                                                                                                                                          Clayton R.A., Kirkness E.F., Dougherty B.A., Merrick J.M., elds C.A., Gocayne J.D.,
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                                                                                                                                                          of Haemophilus
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                                                                                    fumarate
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R EMBL; Y12520; CAA73120.1; -.

R GCRDb; GCR_2407; -.

R InterPro; LPR000275; GPCR_Rhodpsn.

R Pfam; PP00001; 7tm_1; 1.

R PROSITE; PS00237; G_PROTEIN_RECEP_F1_2; 1.

R PROSITE; PS00237; G_PROTEIN_RECEP_F1_2; 1.

R PROSITE; PS00267; G_PROTEIN_TAL).

T TRANSMEM <1 25 1 (POTENTIAL).

T TRANSMEM <26 35 C_POTENTIAL).

T TRANSMEM <37 62 2 (POTENTIAL).

T TRANSMEM 37 62 2 (POTENTIAL).

T TRANSMEM 37 62 2 (POTENTIAL).
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Best Local
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                                                                                                                                                                                                                                                                   PROTEINS.

1- SUBCELLULAR LOCATION: Integral membrane protein.

1- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.

1- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.

1- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COUPLED RECEPTORS.

1- SIMILARITY: BELONGS TO FAMILY 1 OF G-PROTEIN COULD REVEAL OCLIABORATION This SWISS-FROT entry is copyright. It is produced through a collaboration between the Suropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license egreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; U32763; AAC22470.1; -.
HSSP; P04424; LAOS.
TIGR; H10811; -.
InterPro; IPR00365; Fumarate_lyase.
Pfam; PP00206; lyase_l; I
PRINTS; PR00149; FUMRATELYASE.
PROSITE; PS00163; EUMARATE_LYASES; 1.
ARGIGINE DAOSYNTHES15; LYASES; Complete proteome.
ARGIGINE AST AA; 51217 MW; 51272D516BC1FE6B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.

MEDILINE-97357151; PubMed-9214502;

MEDILINE-97357151; PubMed-9214502;

Springer M.S., Cleven G.C., MadSen O.J., de Jong W.W., Waddell V.G.,

Springer M.S., Stanhope M.J.;

"Endemic African mammals shake the phylogenetic tree.";

"Endemic African mammals shake the phylogenetic tree.";

"Endemic African paramals shake the phylogenetic tree.";

"Endemic African mammals shake the phylogenetic tree.";

"ENGTION: ALPHA-2 ADBENERGIC RECEPTORS MEDIATE THE ACTION OF G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Talpa europaea (European mole).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Insectivora; Talpidae; Talpa.
NCBI_TaxID-9375;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AZAB_TALEU STANDARD; PRT; 397 AA.

O19091;
15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Alpha-2B adrenergic receptor (Alpha-2B adrenoceptor) (Fragment).

DRAJB:

DRAJB:
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:: :||: ||| | :: ::: ||
QESVRNLQRHLVQTAENTQQAVMPG 153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 41.6%;
Similarity 32.0%;
B; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 57; DB 1; Length 457; 
pred. No. 0.49; 
9; Mismatches 8; Indels
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RP MEDLINE-90158499; PubMed-2482932;

RX MEDLINE-90158499; PubMed-2482932;

RX MEDLINE-90158499; PubMed-2482932;

RA KONTERMANN R. SIZIZET S., Seifarth W., Petersen G., Bautz E.K.F.;

RA KONTERMANN R. SIZIZET S., Seifarth W., Petersen G., Bautz E.K.F.;

RA MOLGENAN R. SIZIZET S., Seifarth W., Petersen G., Bautz E.K.F.;

RP MOLGEN, Genet 219:373-380(1989).

RC G. OF DNA INTO RNA USING THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS SUBSTRATES. RNA POLYMERASE I IS ESSENTIALLY USED TO TRANSCRIBE CC. FIROSONAL DNA UNITS.

CC RIBOSONAL DNA UNITS.

CC FIROSONAL RAN POLYMERASE IS SUBUNIT IS THE SECOND LARGEST COMPONENT OF RNA POLYMERASE I.

CC FIROSONAL DNA POLYMERASE I.

CC FIROSONAL RNA GENES.

CC FIR
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Best Local s
Matches s
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P20028;
01-FEB-1991 (Rel
01-FEB-1991 (Rel
15-JUL-1999 (Rel
DNA-directed RNA
(RNA polymerase t
RPI135.
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Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SITE
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   This SMISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bibinformatics and the SMBL outstation the European Bibinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
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9; Conserv
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397
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(Rel. 17, Last sequence update)
(Rel. 38, Last annotation update)
(Rel. 38, Last annotation update)
(Rel. 38, Last annotation update)
(Rel. 38, Last annotation update)
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CYTOPLASMIC (POTENTIAL).
6 (POTENTIAL).
6 (POTENTIAL).
7 (POTENTIAL).
7 (POTENTIAL).
17 (POTENTIAL).
18 SIMILARITY.
ASP/GLU-7RICH (ACIDIC).
1MPLICATED IN LIGAND BINDING (BY
SIMILARITY).
1MPLICATED IN CATECHOL AGONIST BINDING
(BY SIMILARITY).
1MPLICATED IN CATECHOL AGONIST BINDING
(BY SIMILARITY).
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Pred. No. 14;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            242
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CYTOPLASMIC (POTENTIAL).
4 (POTENTIAL).
EXTRACELLULAR (POTENTIAL).
5 (POTENTIAL).
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Query Ma Best Loc Matches

Local S

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REDLING-95127529; PubMcd-8590279;

X MEDLING-95127529; PubMcd-8590279;

XA Kaneko T., Tanaka A., Sato S., Kotani H., Sazuka T., Miyajima N.,

XA Sugiura M., Tabata S.;

XS Sugiura M., Tabata S.;

XS Sugiura M., Tabata S.;

XS Sugiura M., Tabata S.;

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XS Sugiura M., Miyajima 
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PIR; JO0354; JO0354; PIRSB; RPI135.
FlyBase; FEgn0003578; RNA_POL_B.
FlanterPro; IPR001572; RNA_POL_B.
Pfam; PF00562; RNA_POL_BETA; I
PROSTTE; BS01166; RNA_POL_BETA; I
Transferrase; DNA-directed RNA POL_Wmerase; Transcription; Zinc: Zinc-finger; Nuclear protein.
Zinc-finger; Nuclear protein.
Zinc-finger; Nuclear protein.
Zinc-finger; Nuclear protein.
EN FING
ZN                                                                                       EMBL: D64003: BAA10537.1;
ISSP: P23875; lb6T
InterPro; IPR001994: Cytldylyltransf.
InterPro; IPR001990: LPS_blosynth.
Pfam; PP01467; Cytldylyltransf; 1.
PRIMTS; PR01020: LPSBIGNTHSS.
TENDESTINE
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Bacteria; Cyanobacteria; Chroccoccales; Synechocystls.
MCBI_TaxID-1148;
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or send an email to license@isb-sib.ch).
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il Similarity 36.7%;
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                                                       Nucleotidyltransferase; Coenzyme A biosynthesis;
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Pred. No. 42;
6; Mismatches
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RESULT 8
B3A2_RABIT STANDARD; PRT; 1237 AA.

C P48746;
DT 01-FEB-1996 (Rel. 33, Created)
DT 01-FEB-1996 (Rel. 33, Last sequence update)
DT 15-JUL-1999 (Rel. 38, Last annotation update)
DT Anion exchange protein 2 (Non-erythroid band 3-like protein) (B3RP)
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Best Local Similarity 33.3
Best Local 7; Conservative
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Best Local S
Matches 9
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STRAIN-74-1;

STRAIN-74-1;

MEDLINE-21020025; PubMed-11139078;

MEDLINE-21020025; PubMed-11139078;

MEDLINE-21020025; PubMed-11139078;

Ivai T., Kurosawa N., Itoh Y.H., Phoriuchi T.;

"Phylogenetic analysis of archaeal PCNA homologues.";

Extremophiles 4:357-364(2000),

Extremophiles 4:357-364(2000),

EXTREMOPHIC SILDING CLAMP SUBUNIT. RESPONSIBLE FOR TETHERING THE

CATALYTIC SUBUNIT OF DNA POLYMERASE TO DNA DURING HIGH-SPEED

REPLICATION (BY SIMILARITY).

-1- SIMILARITY: BELONGS TO THE PCNA FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SULOH STANDARD: PRT: 248 AA. PS7763;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last sennotation update)
10-OCT-2001 (Rel. 40, Last annotation update)
10A polymerase sliding clamp B (Proliferating homolog B) (PCNA B).
PCNB OR PCNAB.
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PROSITE; PS01251; PCNA_1: FALSE_NEG.

PROSITE; PS00293; PCNA_2: FALSE_NEG.

PROSITE; PS00293; PCNA_2: FALSE_NEG.

DNA-blnding; DNA replication.

SEQUENCE 248 AA; 27681 MW; B6E200C3047E6E89 CRC64;
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Archaea; Crenarchaeota; Sulfolobales;
NCBI_TaxID~69656;
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Chow A., Dobbins J.W., Aronson P.S., Igarashi P.;
"CDNA cloning and localization of a band 3-related protein from
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Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus
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                                                                                    616
                                                                                                                           Local Similarity
nes 9; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DISTRIBUTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through a collaboration een the Swiss Institute of Bioinformatics and the EMBI outstation -
                                                                                   EELLRSVAHFQRQMLKKREEQGRLLPPGL
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IPR003020; HCO3_cotransp.
0955; HCO3_cotransp; 1.
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Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
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7 AA;
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                                STANDARD;
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MW; 2811D11051552BB2 CRC64.
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Best Local
                                                                  KEL1_YEAST
P38853;
01-FEB-1995
01-FEB-1995
16-OCT-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.

STRAIN-CDC 1551 / Oshkosh;

Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Fleischmann R.D., Alland D., Gwinn M.L., Haft D., Hickey E.,

Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E.,

Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg (
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula
                                   Kelch repeats protein KEL1 OR YHR158C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AL021309; CAA16145.1; --
EMBL; AE007134; AAK47508.1; ALT_INIT.
TIGR; MT3172; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             laboratory strains.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases
-!- SIMILARITY: BELONGS TO THE UPF0089 FAMILY.
Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                        Hypothetical protein; Complete proteome.
SEQUENCE 472 AA; 52597 MW; AC03BDDB4970FCC0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send
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NCBI_TaxID=1773;
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Hypothetical 52.6 kDa protein Rv3087.
RV3087 OR MTV013.08.
Mycobacterium tuberculosis.
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                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR004255;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Whole genome comparison of Mycobacterium tuberculosis clinical and
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13; Conser
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MEDLINE-94378003; PubMed-8091229;
MEDLINE-94378003; PubMed-8091229;
Dohnston M., Andrews S., Brinkman R., Cooper J., Ding H., Dover J.,
Du 2., Fayello A., Fulton L., Gattung S., Geisel C., Kirsten J.,
Kucaba T., Hillier L., Jier M., Johnston L., Langston Y.,
Latreille P., Louis E.J., Macri C., Mardis E., Menezes S., Mouser L.,
Nhan M., Rifkin L., Riles L., St Peter H., Trevaskis E., Vaughan K.,
Vignati D., Wilcox L., Wohldman P., Waterston R., Wilson R.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Identification of Kellp, a kelch domain-containing protein involved in cell fusion and morphology in Saccharomyces cerevisiae.";
J. Cell Biol. 143:375-389(1998).
I. FUNCTION: HAS A ROLE IN CELL MORPHOGENESIS AND CELL FUSION AND M. ANTAGONIZE THE PKC1 PATHWAY.
INTRACONIZE THE PKC1 PATHWAY.
INTERACTS WITH KEL2.
ISIMILARITY: CONTAINS 5 KELCH REPEATS.
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SEQUENCE
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MEDLINE=99003296; PubMed=9786949;
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                                         DPOA_OXYTR STANDARD; PRT; 1513 AA. Q27152; 15-DEC-1998 (Rel. 37, Created) 15-DEC-1998 (Rel. 37, Last sequence update) 16-OCT-2001 (Rel. 40, Last annotation update) DNA polymerase alpha catalytic subunit (EC 2. Oxytricha trifallax.
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VIIT ":
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COMPLUYEAST-2DPAGE; P38853;
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                      Alveolata; Ciliophora;
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                      hypotrichs; Stichotrichida;
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PROSITE; PS00116; DNA_POLYMERASE_B; 1.

Transferase; DNA-directed DNA polymerase; DNA replication;
DNA-binding; Nuclear protein.

SEQUENCE 1513 AA; 173059 MW; 4DF832EDCFC4416E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA polymerase alpha.";
J. MOl. Evol. 45:301-310(1997).
-:- FUNCTION: POLYMERASE ALPHA IN A COMPLEX WITH DNA PRIMASE IS A
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NCBI_TaxID=5946;
STRAIN-WG096: van den Broek P., Goosen T., Wennekes B., van den Broek P.; submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases. Submitted (SEP-1996) to a constant of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of th
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Pfam; PF03104; DNA_pol_B_exo; 1.
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    -!- CATALYTIC ACTIVITY: N deoxynucleoside triphosphate

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MEDLINE-97451043; PubMed-9302325;
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Eukaryota; Fungi; Ascomycota; Pezizomycotina;
Eurotiales; Trichocomaceae; Emericella.
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                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-FGSC 4;
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                                                                                                                                                                                                                                                                                                                                                                                        Visser J.;
the EMBL/GenBank/DDBJ databases
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1,5-lactone 6-phosphate + NADPH.
PATHWAY: FIRST STEP IN PENTOSE PHOSPHATE PATHWAY.
SIMILARITY: BELONGS TO THE GLUCOSE-6-PHOSPHATE DEHYDROGENASE FAMILY.

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RESULT IF
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TO YPXX_MITTF
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EMBL; X77830; CAA58841.1; -.

EMBL; X77830; CAA58841.1; -.

HSSP; P11411; LDPG;
Interpro; IPR001282; G6PD.

Pfam; PF00479; G6PD; 1.

Pfam; PF00479; G6PD; 1.

PFNUTS; PF000099; G6PD; GEPD; 1.

PFNODOM; PF0001129; G6PD; 1.

PFNODOM; PF000129; G6PD; DEHIDDROGENASE; 1.

PNOSITE; PF000099; G6PD; GHUCOSE metabolism.

Ox160reductase; NADP; G1ucose metabolism.

OX160reductase; NADP; G1uc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YPZX_METTF STANDARD; PRT; 148 AA. p29587; p29587; Ol-APR-1993 (Rel. 25, Created) Ol-APR-1993 (Rel. 25, Last sequence update) Ol-APR-1993 (Rel. 25, Last sequence update) Hypothetical 16.7 kDa protein (ORFII'). Methanobacterium thermoformicicum. plasmid pPZ1. hermoformicicum. plasmid pPZ1. protein (ORFII') Archaeota; Euryarchaeota; Methanobacteriales; Methanobacter.
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                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-DSM 3720 / 2-245;
STRAIN-DSM 3720 / 2-245;
MEDLINE-93116090; PubMed-1336177;
MODILING J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
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Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
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Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
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Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., Eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M., eggen R.J.L., de Vos W.M.;
Modiling J., van Reden F.J.M.
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$26450; $26450,
$30316, $30316.
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Similarity 23.5%;
6; Conservative 1
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Pred. No. 42;
[0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BY SIMILARITY.
MISSING (IN REF. 1).
RSYIKTPTKE -> DTLRERGRK (IN REF. 1).
L -> LP (IN REF. 1).
; 668015B72876A475 CRC64:
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Best Local 5
Matches 8
EMBL; D26044; BAA05045]:

EMBL; AJ002571; AA05592.1:

EMBL; AJ002571; AAA05592.1:

SUBCLIDES; BG10904; ProA.

SUBCLIDES; BG10904; ProA.

InterPro; IPR000965; GPR.

InterPro; IPR000965; GPR.

InterPro; IPR000965; GPR.

PR0STTE; PS01723; PR0A; 1.

PR0STTE; PS01723; PR0A; 
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p39821; 035032;
01-FEB-1995 (Rel. 31, Created)
10-FEB-1995 (Rel. 39, Last sequence update)
16-CCT-2001 (Rel. 39, Last amnotation update)
16-CCT-2001 (Rel. 40, Last amnotation update)
Gamma-glitamyl phosphate reductase (GPR) (FC 1.2.1.41) (Glutamate-5-
semialdehyde dehydrogenase) (Glutamyl-gamma-semialdehyde
dehydrogenase) (GSA dehydrogenase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Devine K.W.;
Sequence of the Bacillus subtilis genome between xiyA and ykoR.";
Sequence of the Bacillus subtilis genome between xiyA and ykoR.";
Submitted (NOV-1997) to the EMBL/GenBank/DDBJ databases.

1 FUNCTION: CATALYZES THE NADPH DEPENDENT REDUCTION OF L-GAMMA-
GLUTAMAT. 5-PHOSPHATE INTO L-GLUTAMATE 5-SEMIALDENYDE AND
PHOSPHATE. THE PRODUCT SPONTANEOUSLY UNDERGOES CYCLIZATION TO E

1 FYRROLINE 5-CARBOXYLE.

1 CATALYTIC ACTIVITY: L-Glutamate 5-semialdehyde + phosphate +
NADP(+) = L-gamma-glutamay 15-phosphate + NADPH.

1 NADP(+) = L-gamma-glutamy 15-phosphate + NADPH.

1 SUBCELULAR LOCATION: CYTOPLASMIC (By SIMILATITY).

1 SIMILARTYY: BELONGS TO THE GAMMA-GLUTAMYL PHOSPHATE REDUCTASE
FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacillus subtilis.

Bactería: Firmicutes: Bacillus/Clostridium
Bacillus/Staphylococcus group; Bacillus.

MCBI_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical protein; Plasmid. SEQUENCE 148 AA; 16658 MW;
                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-94354946; PubMed-8083159;
Oqura M., Kawata-Mukai M. Itaya M., Takio K., Tanaka T.;
"Multipla copies of the proB gene enhance degS-dependent
extraceallular protease production in Bacillus subtilis.";
j. Bacteriol. 176:5673-5680 (1994).
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STRAIN-168;
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STRAIN-168;
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106 KDTLRNMAFKIALVSDGIDKN 126
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RX SIMPSON A.J.G., Relimach F.C., Arraya J.E., Baia G.S., Baptista C.S.
RA Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S.
RA Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S.
RA Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S.
RA Barros M.H., Bonaccorsi E.D., Bordin S., Borel J.M., Carraro D.M., Carrer H.,
RA Golauco N.B., Colombo C., Costa F.F., Costa M.C.R., Costa Net. R.R., Colauco N.B., Colombo C., Costa F.F., Costa M.C.R., Costa Net. R.R., Colauco N.B., Colombo C., Costa F.F., Costa M.C.R., Costa Net. R.R., Colombo C., Costa F.F., Costa M.C.R., Costa Net. R.R., Colombo C., Costa F.F., Costa M.C.R., Costa Net. R.R., Colombo S.C., Franco M.C., Frohne M., Furlan L.R.,
RA Frega J.S., Ferenca S.C., Franco M.C., Frohne M., Furlan L.R.,
RA Frega J.S., Ferenca S.C., Franco M.C., Frohne M., Furlan L.R.,
RA Krieger J.E., Kuramae E.E., Laigret F., Lambais M.R., Lette L.C.C.,
RA Kachado M.A., Madelra A.M.B.N., Madeira M.M.F., Marchado J.A.,
RA Harques M.V., Marchas E.C., Laigret F., Lambais M.R., Lette L.C.C.,
RA Marques M.V., Marchas E.C., Laigret F., Lambais M.R., Lette L.C.C.,
RA Mania A. Jr., Nobrega F.G., Nunes L.R., Oliveira M.A.,
RA Moon D.H., Nagai M.A., Nascimento A.L.T., O., Netto L.E.S.,
RA Moon D.H., Nagai M.A., Nascimento A.R., Oliveira M.A.,
RA de Collveira R.C., Painleri D.A., Paris A.,
RA de Collveira R.C., Santelli R.V., Sawasaki H.E.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva A.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva M.P., Terenzi M.F., Truffi D., Tsai S.M., Tsuhako M.B.,
RA de Solva M. S.M., Macdanis J., Setubali J.C.,
RA de Solva M. S.M., Macdanis J., Se
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OPPEMS:
16-CCT-2001 (Rel. 40, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Last sequence update)
16-CCT-2001 (Rel. 40, Created)
16-CCT-2001 (Rel. 40, Last sequence update)
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MEDLINE-20365717;
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E -> FGIRLISRNRHQHAKASCKRTDGASCTDFYKIHH

(IN REF. 1).

BCA4B0D35F9F62D0 CRC64;
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Matches 1
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                                                                                                                                    EMBL; AE003938: AAF83815.1; ALT_INIT.
InterPro: IPRO00965; GFR.
PROSITE: PS01223; PROA: 1.
OXIGOTEGUCTASE; ProLine biosynthesis; NADP; Complete proteome.
SEQUENCE 415 AA; 44553 MW; 68F3A83D26BD454D CRC64;
177
                 Match
LVQDMARHTMLELLQLSDLIDLVIPRG
                                                          10; Conservative
                                                                      32.1%;
                                                        ; Score 44; DB; Pred. No. 40; 7; Mismatches
203
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Search completed: September 20, 2002, 11:04:31 Job time: 1628 sec

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o9brx3 homo sapien
o99m39 mus musculu
o99j1t6 rattus norv
O93l67 pseudomonas
o9x2x0 rhodospiril
o9x67 derosophila
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## ALIGNMENTS

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RESULT
Q99M39
ID Q9
AC Q9
DT 01
                                                                                                                                                                                                                                                 Ouery Match 100.0%; Score 137; DB 4;
Best Local Similarity 100.0%; Pred. No. 4.5e-12;
Matches 27; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                            Strausbarg R;
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC005884; AAR05884.1;
EMSE; P55957; 28ID.
InterPro: IPR009712; Bcl.2.
PROSITE; PS01259; BRS; 1.
SPOCHECLOAL protein
Hypothetical protein
SPQUENCE 467 AA; 51663 MW; 7D7121D47F8E9D48 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9BRX3 PRELIMINARY; PRT; 467 AA.
Q9BRX3; O1-JUN-2001 (TrEMBLrel. 17, Created)
O1-JUN-2001 (TrEMBLrel. 17, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
ATPOTRETICAL 51.7 KOA PROTEIN.
HOMO SAPLENS (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
MCBI_TaxID=9806;
Q99M39 PRELIMINARY; PRT;
Q99M39;
01-JUN-2001 (TrEMBLrel. 17, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
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       RESULT
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Matches 17
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Best Local S
Matches 19
       Q9JK60
Q9JK60;
01-0CT-2000
01-0CT-2000
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Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases
EMBL; BC002031; AAM02031.1; -.
HSSP; P70444; lDDB,
MGD; MGI:108093; Bid.
InterPro; IPR000712; Bcl. 2.
PROSTTE: PS01259; BH3; 1.
PROSTTE: PS01259; BH3; 1.
SEQUENCE 195 AA; 21951 MW; 52F412714FB867F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP: P70444; 1DDB.
InterPro; IPR000712; Bcl_2.
PROSITE; PS01259; BH3; UNKNOWN_1.
SEQUENCE 196 AA; 22281 MW; C5F6AD3F442C02E3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY;
Chen D., Cao G., Chen J.;
"Cloning of rat apoptotic death agonist (BID) and its different expression in ischemia and normal rat brain.";
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
EMBL: AF1362B2; AAB61422.1; -.
EMBL: AF1362B2; ADF6142.1; -.
EMBL: AF1362B2; ADF6142.1; -.
EMBL: AF1362B2; ADF6142.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09JIT6; PRELIMINARY; PRT; 196 AA.
09JIT6;
01-CCT-2000 (TEMBLIFE). 15, Created)
01-CCT-2000 (TEMBLIFE). 15, Last sequence update)
01-DCT-2000 (TEMBLIFE). 19, Last annotation update)
APOPTOTIC DEATH AGONIST BID.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-10116;
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TISSUE-MANNARY TUMOR. WAP-TGF ALPHA MODEL. 7 MONTHS OLD, GROSS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JUN-2001 (TEMBLIFE) 17, Last sequence update)
01-DEC-2001 (TEMBLIFE) 19, Last annotation update)
BHJ INTERACTING DOMAIN DEATH ACONIST.
                                                                                                                                                                                                                                       1 Similarity 63.0
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l Similarity 70.4%;
19; Conservative
       (TremBirel, 15, (TremBirel, 15,
                                                                                            PRELIMINARY;
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   Created)
Last sequence update)
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Pred. No. 7.7e-07;
3; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                         Score 92; DB 11; Length 196; Pred. No. 8.5e-06; Indels
                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Rattus
                                                                                            196
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RESULT
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Best Local S
Matches 8
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C STRAIN-ATCC 13525;

A Feng S.F., Rossbach S.;

T "A locus involved in metal homeostasis in Pseudomonas fluorescens
T encodes a proton/cation antiporter of the RND family and a two-
T component system.);

C submitted (AuG-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AY007258; AAG09534 1; ".

SUBMITTED IPRO00101; PAC.
R InterPro; IPR000101; PAC.
R InterPro; IPR000101; PAS.
R InterPro; IPR000700; PAS-assoc_C.
R Pfam; PF00785; PAC; 1.

R SMART; SM00086; PAC; 2.

B BOSCET; SM00091; PAS; 2.
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Best Local S
Matches 17
Q9X2X0
Q9X2X0;
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NON_TER
SEQUENCE
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199ALO7;
199ALO7;
199ALO7;
101-JUN-2001 (TrEMBLrel. 17, Created)
101-JUN-2001 (TrEMBLrel. 18, Last sequence update)
101-CCT-2001 (TrEMBLrel. 18, Last annotation update)
101-CCT-2001 (TrEMBLrel. 18, Last annotation update)
METHYL-ACCEPTING CHEMORRCEPTOR-LIKE PROTEIN ORF2 (FRAGMENT).
PSeudomonas fluorescens
Pseudomonas fluorescens
Bacteria: Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Itoh T., Itoh A., Pleasure D.;
Submitted (ARR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AR259503; AAR71759.1;
HSSP: P70444: 1DDB.
InterPro; IPR000712; Bcl_2.
PROSSTTE; PS01259; BdS; UNKNOWN_1.
SEQUENCE 196 AA; 22249 WW; C5F6AD2F5D9B52E3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pseudomonas.
NCBI_TaxID=294;
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                       308 DVMRDLARHMOQAGDGIE 325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BID
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                                                                                                                                                                                                                                                                                     Similarity 44.4
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                       336
336 AA;
                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                  40.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                   336
38039 MW;
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Pred. No. 3.5;
7; Mismatches
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Pred. No. 8.5e-06;
4; Mismatches 6;
                            PRT;
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                            190
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Best Local S
Matches 9
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Proc. Natl. Acad. Sci. U.S.A. 98:373-378(2001).

R EMBL; AP305912; AAG31142.1; .

R HSSP: P1293; IPM000719; Euk_pkinase.

R InterPro; IPM000719; Euk_pkinase.

R InterPro; IPM004040; STY_pkinase.

R InterPro; IPM004040; STY_pkinase.

R InterPro; IPM001245; TYT_pkinase.

R Pfam: PF00059; Pkinase: I.

R Pfam: PF00059; Pkinase: I.

R Pfam: PF000109; TYRKINASE.

R SMART; SM00221; STYKC; I.

R SMART; SM00210; S.TKC; I.

R SMART; SM00210; PROTEIN_KINASE_ATP; 1.

R PROSITE; PS00107; PROTEIN_KINASE_ATP; 1.

R PROSITE; PS00117; PROTEIN_KINASE_ATP; 1.

R PROSITE; PS00117; PROTEIN_KINASE_DOM; 1.

R ATP-binding; Transferase.

M ATP-binding; Transferase.

M ATP-binding; Transferase.

M SEQUENCE 957 AA; 106338 MM; 3CF8ESPAE0413115 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAR-2001
01-MAR-2001
01-DEC-2001
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Science 285:406-409(1999).
EMBL, AP064527; AAD22393.1;
SEMBL, AP064527; AAD22393.1;
SEQUENCE 190 AA: 19654 MM; 27F62F131A339580 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01.NOV-1999 (TREMBLIEL. 12, Created)
01.NOV-1999 (TREMBLIEL. 12, Last sequence update)
01.DEC-2,001 (TREMBLIEL. 19, Last annotation update)
HYPOTHETICAL 19.7 KDA PROTEIN.
Rhodospirillum centenum (Rhodocista centenaria).
Bacteria; Proteobacteria; alpha subdivision; Rhodospirillum.
Rhodospirillum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Hordeum vulgare (Barley).

Eukaryota: Viridiplantae: Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Pooldeae; Triticeae; Hordeum.

NCBI_TaxID=4513;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=CV. INGRID;
MEDLINE=21065153; PubMed=11114160;
MEDLINE=21065153; PubMed=11114160;
MEPLINE=21065153; PubMed=11114160;
"Regative regulation of defense responses
"Negative regulation of defense responses
MAPKK kinase.";
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STRAIN-ATCC51521;
MEDLINE-99340299; PubMed-10411503;
Jiang Z., Swem L.R., Rushing B.G., Devanathan S., Tollin
Bauer C.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=34018;
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                                       Local
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l Similarity 52.
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CG17041 PROTEIN.
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-- SIMILARITY: BELONGS TO THE GLOBIN FAMILY.
EMBL; Z75550; CAA939221.1; ...
InterPro; IPR000971; Globin.
Pfam; PR00042; globin; 1.
PROSITE; PS01033; GLOBIN; 1.
PROSITE; PS01033; GLOBIN; 1.
Heme; Oxygen transport; Respiratory protein.
SEQUENCE 183 AA; 21057 MW; 88D04980508NED63 CRC64;
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Eukaryota; Metasoa; Nematoda; Chromadorea;
Rhabditidae; Peloderinae; Caenorhabditis.
MCBI_TaxID=6239;
SPÖMENCE FROM N. A.
STRAIN-BERKELEY;
MEDLINE-20196006; PubMed-10731132;
MEDLINE-20196006; PubMed-10731132;
MEDLINE-20196006; PubMed-10731132;
Meddams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Li.P.W., Hoskins R.A., Galle R.F.,
George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
George R.A., Lewis S.E., Yandels M.D., Zhang Q., Chen L.X.,
Sutton G.G., Wortman J.R., Yandels M.D., Zhang Q., Chen L.X.,
Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
Wan K.H., Doyle C., Baxter B.G., Helt G., Welson C.R., Miklos G.L.G.,
Mark H., Doyle C., Baxter B.G., Helt G., Welson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Haxapoda; Insecta;
Pterygota; Meoptera; Endoptera; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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STRAIN-BERKELEY;

MEDLINE-20196006; PubMed-10731132;

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MEDLINE-20196006; PubMed-10731132;

MADAMS M.D., Celniker S.E., Li P.W., Boskins R.A., Galle R.F.,

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Brandon R.C., Rogers Y.-H.C., Blazel R.G., Nelson C.R., Miklos G.L.G.

Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.
                                                                                                                                                                                                                                           Drosophila melanogaster (Fruit fly).
Bukaryota: Metazoa; Arthropoda; Tracheata: He
Pterygota: Neoptera; Endopterygota; Diptera;
Ephydroidea: Drosophilidae; Drosophila.
NCBI_TaxID=7227;
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Fleischmann W.,
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RA Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Besson K.Y., Bernos P.V., Bernam B.P., Bhandari D., Bolshakov S.,
RA Borkova D., Botchan M.R., Bouok J., Brokstein P., Bolshakov S.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Fleisofmann W.,
RA RAITIS N.L., Barvey D., Reiman T.J., Wei M., Glasser K.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Galbart W.M., Glasser K.,
RA Hostin D., Houston K.A., Howland T.J., Wei M., H., Hoewam C.,
RA Hostin D., Houston K.A., Howland T.J., Wei M., H., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Llu X., Matrej B., McIntosh T.C., McLeod M.P., McPherson D.L.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Melson D.R., Nelson K., Sauders R.D., Parle D.J.M., Nelson D.R.,
RA Raharzolo M., Stirons R., Pollard J., Purl V., Reese M.G.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E., Yao Q.A.,
RA Zheng X.H., Khong F.N., Zhong W., Zhou D., Zhu D., Zhang S., Zhu X., Smith H.O.,
RA Zheng X.H., Khong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
RA Zheng X.H., Khong F.N., Zhong W., Zhou X., Zhu S., Zhu X., Smith H.O.,
RA Zheng X.H., Zhong S., Zhong W., Zhou X., Smith H.O.,
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RA Zheng X.H., Zhong S., Zhong W., Zhou X., Smith H.O.,
RA Zheng X.H., Zhong S., Zhong W., Zhou X., Smith H.O.,
RA Zheng X.H., Zhong S., Zhong W.
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Best Local S
Matches 11
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924145: Q26299; Q9V7K5;
01-NCY-1996 (TYEMBLYEL 01, Created)
01-OCY-2000 (TYEMBLYEL 15, Last sequence update)
101-DEC-2001 (TYEMBLYEL 19, Last annotation update)
TYROSINE-PROTEIN KINASE SHARK (EC 2.7.1.112) (SHARK CLUBS CLUBS CORP.)
(LD41606P),
SHARK OR TK7 OR CG18247
Drosophila melanogaster (Fruit fly).
Eukaryota; Metgaca; Arthropoda: Tracheata; Hexapoda; Pterygota; Megaca; Brachycerygota; Discentides; Drosophilla.
Plerygota; Neoplera; Endopterygota; Discent; Brachycerygota; Drosophilla.
                                                                                                                             MEDILINE-95199263; PubMed-7892198;
Ferrante A.W. Jr., Reinke R., Stanley E.R.;
"Shark, a Src homology 2, ankyrin repeat, tyrosine kinase,
expressed on the apical surfaces of ectodermal epithelia.",
Proc. Natl. Acad. Sci. U.S.A. 92:1911-1915(1995).
STRAIN-BERKELEY;
MEDLINE-20196006;
                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.,
TISSUE-EMBRYO;
                                                                SEQUENCE FROM N.A.
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PubMed = 10731132
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Pred. No. 29;
2; Mismatches
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George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,

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Celniker S.E., Holt P.G., Scherer S.E., I

R.A., Evans C.A., Gocayne Li P.W., Hoskins R.A., Gall

Galle R.F.

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RA Durbin K.J. Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Harvey D., Heinan T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Kulp D., Lai Z.,
RA Mcikulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Morris J., Moshrefi A.,
RA Mount S.M., Moy M., Murphy B., Murphy L., Morris J., Moshrefi A.,
RA Nelson D.R., Neltons G.S., Pan S., Pollard J., Puri V., Resee M.G.,
RA Reinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Spier E., Spradling A.C., Stapleton M., Skupski M.P., Smith T.,
RA Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Sviiskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
RA Wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
RA Yeb J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhao Q., Zheng L.,
RA Zheng X.H., Moodage T., Worley K.C., Wu D., Yang S., Yao Q. A.,
"The genome sequence of Drosophila melanogaster.";
RT Science 287:2185-2195(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P., Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., de Pablos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M., Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn Durbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Flelschmann
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                                                                                                                                                                                                                                                                                                                                                     Stapleton M., Brokstein P., Hong L., Agbayani A., Carlson J., Champe M., Chawez C., Dorsett V., Farfan D., Frise E., George R., Gonzalez M., Guarin H., Li P., Liao G., Miranda A., Mungall C.J., Nunco J., Pacleb J., Paragas V., Park S., Phouanenavong S., Wan K., Yu C., Levis S.E., Rubin G.M., Celniker S.;
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                                                              TISSUE SPECIFICITY: GASTRULATION EMBRYOS SHOW EXPRESSION IN ECTODERNAL CELLS ALONG THE CEPHALIC FURROW AND VENTRAL MIDLINE. PROCTODEM, STONDEUM AND THEIR DERIVED STRUCTURES (FOREGUT, ATRIUM, PHARYNX, ESOPHAGUS AND HINDGUT) CONTINUE TO SHOW EXPRESSION FROM STAGE 8-9 TO LATE EMBRYOS. OTHER ECTODERNALLY DERIVED STRUCTURES (FRONTAL SAC, SALIVARY GLAND AND LABIUM) AND DEVELOPING TRACHEAL SYSTEM ALSO SHOW EXPRESSION.

DEVELOPMENTAL STAGE: EMBRYOS ONLY.
                                             SIMILARITY:
                                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: CYTOPLASMIC.
                                                                                                                                                                                                                                                                  FROM THE BASAL SURFACE.
                                                                                                                                                                                                                                                                                      FURROW AND TRACHEAL CELLS; LIMITED
                                                                                                                                                                                                                                                                                                                                      TYROSINE PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          vis S.E., Ru
(AUG-2001)
  CONTAINS
                                                  TO OTHER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          to the EMBL/GenBank/DDBJ databases.
  2 SH2 DOMAINS
                                                  PROTEIN-TYROSINE KINASES IN THE CATALYTIC
                                                                                                                                                                                                                                                                                      APICAL EXPRESSION IN CEPHALIC TO LUMINAL SURFACE AND ABSENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kennison J.A., Ketchum K.A.,
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10 DOMAIN 10
REPEAT 153
REPEAT 186
REPEAT 220
REPEAT 220
DOMAIN 662
NP_BIND 668
BINDING 698
                                          01-MAY-1999
01-MAY-1999
01-DEC-2001
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CONFLICT
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SMART; SM00253; SH2; 2.
SMART; SM00219; TyrKc; 1.
PROSITE; PS50088; ANK_REPERT; 3.
PROSITE; PS50797; ANK_REP_REGION; 1.
PROSITE; PS00101; PROTEIN_KINASE_ATP;
PROSITE; PS50011; PROTEIN_KINASE_DOM;
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Pfam; PF00017; SH2; 2.
PRINTS; PR00401; SH2DOMAIN.
PRINTS; PR00109; TYRKINASE.
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EMBL; AY051937; AAK93361.1; -.
EMBL; S55982; AAB19909.1; -.
HSSP; P08631; IAD5.
                                                                            098590;
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InterPro; IPR001245; Tyr_pkinase.
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InterPro; IPR000719; Euk_pkinase.
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                                                                                                                                                                                                                                          SEQUENCE
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Pleiospermium alatum Chloroplast.
                       ATPB
                                ATP SYNTHASE BETA SUBUNIT
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                                                                                                                                                                6 RNI----ARHLAQVGD-SMDRSIPPG
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                                                                                                                                                                                               Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS00109; PROTEIN_KINASE_TYR;
                                          (TrEMBLrel. 10, Created)
(TrEMBLrel. 10, Last sequence update)
(TrEMBLrel. 19, Last annotation update)
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                                                                                      PRELIMINARY;
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PHOSPHORYLATION (POTENTIAL).

A -> V (IN REF. 1).

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Pred. No.
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ANK 3.
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ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

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RESULT

Q9X906

AC Q90

Q1 Q1 Q1

Q1 Q1 Q1

Q2 Q1

Q3 Q2 Q2

Q4 Q4 Q4

Q5 Q4 Q4

Q6 Q6 Q6 Q6

Q7 Q6 Q6

Q8 Q7 Q6

Q8 Q7 Q6

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Best Local Similarity 55.6
Matches 10; Conservative
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InterPro; IPR004100; ATP-synt_ab_N.
InterPro; IPR000793; ATPase_AB_C.
InterPro; IPR000793; ATPase_Alpha_beta.
Pfam; PF00006; ATP-synt_ab; 1.
Pfam; PF00306; ATP-synt_ab_C; 1.
Pfam; PF00306; ATP-synt_ab_N; 1.
SMART; SM0382; AAA; 1.
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Q9X906;
Q1.NQV-1999 ('
Q1-NQV-1999 ('
Q1-DEC-2001 ('
PUTATIVE DNA I
SCH5.03C.
                                                                                                                                                                                                                                                                        Streptomyces coelicolor.
Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                      STRAIN-A3(2);
Seeger K.J.,
                                              STRAIN=A3(2);
Bentley S.D., Parkhill J.,
Submitted (MAR-1999) to th
                                                                                                                                                                     Submitted
                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE: PS00152; ATPASE_ALPHA_BETA; ATP synthesis; ATP-binding: CF(1); Cl
Hydrogen ion transport; Hydrolase; Tl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -i- SIMILARITY: BELONGS TO THE ATPASE ALPHA/BETA CHAINS FAMILY EMBL; AF666850; AAD11735.1; -. HSSP; P07677; 1SKY.
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"Phylogenetic relationships of Rutaceae: a cladistic subfamilies using evidence from rbcL and atpB sequence Am. J. Bot. 86:1191-1199(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. PubMed=10449399;
                                                                                                                      SEQUENCE FROM N.A.
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SUBUNIT: F-TYPE ATPASES HAVE 2 COMPONENTS, CF(1) - THE CATALY CORE - AND CF(0) - THE MEMBRANE PROTON CHANNEL. CF(1) HAS FIV SUBUNITS: ALPHA(3), BETA(3), GAMMA(1), DELTA(1), EPSILON(1). HAS THREE MAIN SUBUNITS: A, B AND C (BY SIMILARITY).

SUBCELLULAR LOCATION: CHLOROPLAST THYLAKOID MEMBRANE (BY
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                                                                                                                                                                     J., Harris
(MAR-1999)
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485 AA;
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                                                                     Barrell B.G.,
                                                 Barrell B.G., Rajandream M.A
EMBL/GenBank/DDBJ databases
                                                                                                                                                                   EMBL/GenBank/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
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Pred. No. 69;
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                                                                     M.A.;
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ce variation.
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REGULATORY
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Q9PFP9;
01-OCT-2000
01-OCT-2000
01-DEC-2001
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"A set of ordered cosmids and a detailed genetic and the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
Mol. Microbiol. 21:77-96(1996).
EMBL; AL03536; CAB38477.1;
                                                                                                                              "The genome sequence of the plant pathogen Nature 406:151-159(2000).
EMBL; AE003906; AAF83418:1;
                                                                  InterPro; IPR001296; Glycos_transf_1.
Pfam; PF00534; Glycos_transf_1; 2.
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401 AA; 42525
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27.8%;
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                                                                                                                                                                                                    Xylella fastidiosa.";
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QSKR9
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ID Q9KR99
ID Q9KR99
DT 01-OCT
DT 01-OCT
DT 01-DEC
DE HYPOTH
GN VCL577
OS Vibrio
OC Bacter
CX NCBLT
RN [1]
RP SEQUEN
RC STRAIN
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RA DOGSON
RA EINOLS
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Search completed: September 20, 2002, 11:03:41 Job time: 1658 sec
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Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

STRAIN-EL TOR N16961 / SEROTYPE 01;

MEDLINE-20406833; PubMed-10952301;

Meddelberg J.F., Elsen J.A., Nelson W.C., Clayton R.A., Gwińn M.L.,

Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam L.A.,

Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D.,

GILL S.R., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.,

Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.,

McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White O.,

Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.C.,

Fraser C.M.;
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Q1-OCT-2000 (TrEMBLrel. 15, Created)
Q1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
HYPOTHETICAL PROTEIN VC1577.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "DNA sequence of both chromosomes of the cholera pathogen Vibrio cholerae.";
Nature 406:477-483(2000).
EMBL; AE004235; AAF94731.1; -.
TIGR; VC1577; -.
Hypothetical protein; Complete proteome.
Hypothetical protein; Complete proteome.
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Bacteria; Protec
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237 DDLSRNIAQDAQQLADMMQQAI 258
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proteobacteria; gamma subdivision; Vibrionaceae; Vibrio.
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Pred. No. 1.5e+02;
9; Mismatches 4
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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138
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                                                            Bcl2 polypeptide B
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bcl-x(L)/bcl-2 ass
Murine BCL-XL/BCL-
                                                Mutant
t BCL-XL/BCL-
t BCL-XL/BCL-
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Arabidopsis thalia	AAG52445	21	516	36.2	50	5
Arabidopsis thalia	AAG25576	21	242		51	44
is thai	AAG54028	21	241		51	3
Arabidopsis thalia	AAG54679	21	236		51	42
is thal	AAG54029	21	232		51	4
is that	AAG25577	21	232	•	51	40
Arabidopsis thalia	AAG54030	21	186		51	39
is thal	AAG25578	21	186		51	88
is thal	AAG25217	21	181	37.0	51	37
	AAG25218	21	171		51	36
is tha	AAG25219	21	125	٠	51	σ,
doma	AAB70380	22	20		72	4.
BAD BH3 domain reg	AAB70379	22	18		72	33
þept	AAB37029	21	16	٠	73	32
Human BAD BH3 doma	AAY05421	20	16		73	31
þept	AAB37028	21	16		84	30
Mouse BAD BH3 doma	AAY05422	20	16		84	29
bcl-x(L)/bcl-2 ass	AAR95163	17	16	•	86	28
3 consen	AAB70371	22	26	•	93	27
lian Bad	AAY96321	21	26	.7	93	26
Mutant BCL-XL/BCL-	AAW61322	19	59	73.9	102	25
BCL-XL	AAW61321	19	59	ω.	102	24
Mutant BCL-XL/BCL-	AAW61320	19	59	ω.	102	23
$\sim$	AAW61319	19	59	ω.	102	22
bcl-x(L)/bcl-2 ass	AAR95166	17	23		113	21
Amino acid sequenc	AAG67688	22	168		114	20
	AAB48287	22	168		114	19
mutant	AAB70368	22	168		114	18
Human cell prolife	AAB13512	21	168		114	17
n Bcl-x	AAW55779	19	168	.~	114	16
	AAW32476	18	166	Ņ	114	15
-3	AAU00220	22	567	0	138	14
murine BA	036	22	204	۰.	138	ω.
Murine BAD protein	AAW58832	19	204	100.0	138	12

## ALIGNMENTS

## RESULT AAB37001 AAB37001 standard; peptide; Н 26

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28-FEB-2001 (first entry)

AAB37001;

Bcl2 polypeptide BH3 domain peptide #1.

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

Homo sapiens.

WO200059526-A1

12-OCT-2000

06-APR-2000; 2000WO-US09352

07-APR-1999; 99US-0128202

(UYJE-) UNIV JEFFERSON THOMAS.

A COS X COS Huang Wang Ġ Zhang Ζ, Shan

> ķ Ľ 2;

WPI; 2000-679325/66

New peptide conjugates for modulating apoptosis or for inhibiting

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AAB37002
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AC AAB3
XX 28-F
XX BC12
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KW Cold
KW apper
KW apper
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KW strc
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(C (R-X))n-peptide where n = 1.10; X = C=0, when the R-X group is attached

(C to the N-terminus of the peptide, or a side chain of the peptide where

(C the functional group of the side chain is NH2 or OH; or X = O or NH,

(C when the R-X group is attached to the C-terminus of the peptide, or a

(C side chain of the peptide, where the side chain functional group is COOH

(C or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one

(C or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally

(C monosubstituted with a 1-5C straight or branched chain alkyl group,

(C phenyl optionally monosubstituted with a 1-5C straight or branched chain

(C of alkyl group, or benzyl. The peptides AAB37001-B37058 represent examples

(C of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of

(C the BH3 domain of the cell death agonist Bad. The peptide conjugate is

(C useful for modulating apoptosis in the cells of a subject, or for

(C apoptosis in cancer cells. It is also useful for inhibiting Bcl-2

(C function. In particular, the peptide conjugate is useful for treating a

(C subject afflicted with a cancer characterized by cancer cells that

(C express Bcl-2. The cancer includes prostate, colorectal, gastric,

(C acute or chronic lymphocytic and non-lymphocytic leukemia. The peptide

(C conjugate is also useful for treating disorders characterized by

(C immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Best Local
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      Huang Z,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bcl2 polypeptide BH3 domain peptide #2.
                                                                      (UYJE-)
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                                                                   UNIV JEFFERSON THOMAS
      Wang J,
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   Zhang Z,
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CC (R-X)n-peptide where n = 1-10; x = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide, where the N-terminus of the peptide where CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain is NH2 or OH; or X = O ON NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COH or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides Ah837001-837058 represent analogues of the peptide portion of the conjugate. The peptides represent analogues CC of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of cuseful for modulating apoptosis in the cells of a subject or for concurrence cells. It is also useful for inhibiting Bcl-2 (apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 (apoptosis in cancer cells. It is also useful for treating a subject or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is useful for treating a concer characterized by cancer cells that concersed apoptosis, e.g. neurodegenerative disorders, acquired inmunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Matches
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06-APR-2000; 2000WO-US09352

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RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local
                                                                                                                                                                                              Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bdd; apoptosis modulation; B cell lymphomma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
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                                                                                                                                                                                                                                                                                                                                                                                                                  Bcl2 polypeptide BH3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB37056 standard;
                                                                                                                                  Homo sapiens.
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26; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                  domain peptide #56.
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Pred. No. 1.4e-14;
Mismatches 0;
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CC (R-X)n-peptide where n = 1-10; x = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain of the peptide or NH, CC when the R-X group is attached to the C-terminus of the peptide or NH, CC when the R-X group is attached to the C-terminus of the peptide or NH, CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cycloburyl represent analysis on the peptide where the side chain functional group is COOH CC or consubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides ABB37001-B37058 represent analogues CC of the peptide portion of the conjugate. The peptides represent analogues CC of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC corresponds in cancer cell death agonist Bad. The peptide conjugate is CC useful for modulating apoptosis in the cells of a subject, or for CC apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 (function. In particular, the peptide conjugate is useful for treating a CC subject afflicted with a cancer characterized by cancer cells that CC express Bcl-2. The cancer includes prostate, coloractal gastric, conjugate is also useful for treating dastric, and constant or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for treating dastric, and conserved is also useful for treating dasorders, acquired to increased apoptosis, e.g., neurodegenerative disorders, acquired to increased apoptosis, e.g., neurodegenerative disorders, acquired conjugate is also useful for treating dasorders acquired in the conjugate is acquired to increased apoptosis, e.g., neurodegenerative disorders.
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Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 18;
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                            Query Match
Best Local S
Matches 26
Similarity 100.0%;
26; Conservative 0
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                           Score 138; DB 21; Pred. No. 1.4e-14; Mismatches 0;
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                            Indels
                                          Length
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RESULT AABJOAT AAABOAT AABJOAT AABJOAT AAB BCL:
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                                                                                                             AAB37055
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                                                                                                             standard;
                                                                                                             peptide;
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Bc12 polypeptide BH3 domain

peptide #55

28-FEB-2001

(first entry)

Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; myocardial

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RESULT
AAB70370
ID AAB70370
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AC AAB7
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DT 02-W
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Best Local Similarity 100.0%; Pred. No. 1.5e-14;
Matches 26; Conservative 0; Mismatches 0;
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Bcl-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antilischaemic; vulneşary; cytostatic; antiliral; antiarthritic; antiliflammatory; wound hebiling; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer;.
                                                                                                                                                                                      Shorter murine BAD mutant amino acid sequence
                                                                                                                                                                                                                                                                     02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                   AAB70370;
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                                                                                                                                                                                                                                                                                                                                                                                                                         AAB70370 standard:
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                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                     protein; 162
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New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seril1 -
                                                                                                                                                                                            Claim 7; Page 148-149; 157pp; English.
                                                                                                                                                                                                                                                                                                                                                                                  Synthetic
                                                                                                                                                                                                                                                          WPI; 2001-138734/14.
                                                                                                                                                                                                                                                                           Zhou
                                                                                                                                                                                                                                                                                                                             30-MAY-2000;
                                                                                                                                                                                                                                                                                                                                                                 WO200110888-A1
                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                          immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoprolliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                           (APOP-) APOPTOSIS TECHNOLOGY INC
                                                                                                                                                                                                                                                                                                                                                15-FEB-2001
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The present invention describes an isolated or synthetic polypeptide (1) comprising a less than full length amino acid sequence of a mutant controlled the second sequence of a mutant controlled the sequence of a mutant controlled the sequence of a mutant controlled the sequence of a mutant controlled the sequence of a mutant controlled the sequence of a mutant controlled the sequence of the sequence of a mutant controlled the sequence of the sequence of a mutant controlled the sequence of the sequence of a mutant controlled the sequence of the sequenc 162 À

Sequence

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98 nlwaaqrygrelrrmsdefegsfkgl 123
          1 NLWAAQRYGRELRRMSDEFEGSFKGL
                                            Similarity
                                  100.0%;
ilarity 100.0%;
Conservative (
                                  0;
                                           Score 138;
Pred. No.
                  26
                                  Mismatches
                                  1.1e-13;
hes 0;
                                                    Ва
                                   Indels
                                                   Length 162;
                                   0;
                                   Gaps
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0

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RESULT
AAR95168
AAR95168 standard; Protein;
 204
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ZZZZZZZZZZZZZZZ bcl-x(L)/bcl-2 associated death promoter protein.

06-JAN-1997

(first entry)

Epitope; murine; bcl-x(L)/bcl-2 associated death promoter; Bad; stroke; polypeptide; bcl-x; cell death; regulate; BH; BH2; apoptotic cell death; cytokine deprivation; IL-3 dependent cell line; immunodeficiency; ALDS;

neurodegenerative disease; senescence; ischaemia; neoplasia.

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RESULT 8
AAW61315
ID AAW613
XX AAW613
AC AAW613
XX DT 07 OCT
DT 07 OCT
DX Murine
XX
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                                                                                                                                                                                                                                Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                This sequence represents the murine bcl-x(L)/bcl-2 associated death promoter (Bad) gene. Bad is a 22.1 kD protein which interacts with bcl-2 and bcl-x proteins and regulates cell death. It has homology to the bcl-2-related family clustered in the BH1 and BH2 domain. Bad has been found to hybridise to bcl-x(L) and bcl-2 in yeast two-hybrid assays and in vivo in mammalian cells. Overexpressed Bad counters the death inhibitory activity of bcl-x(L) but is much less effective at countering the death inhibitory activity of bcl-2. Bad expression can accelerate apoptotic cell death induced by cytokine deprivation in an II-3 dependent cell line expressing bcl-x(L). Bad its also counters the death repressor activity of bcl-x(L). Bad competes which inhibit its binding to bcl-x(L). Bad may be used to identify agents which inhibit its binding to bcl-x(L) are bcl-x(L) to form heterodimers. Such agents may be used to treat neurodegenerative diseases, immunodeficiency diseases, c. e.g. AIDS, senescence or ischaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Polynucleotide encoding bcl-x(L), Dcl-2 associated death promoter useful to treat neoplasia and apoptosis and to identify agents inhibiting its binding to bcl-2 or bcl-x(L) to form heteromultimers
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N-PSDB; AAT29479.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                   Murine BCL-XL/BCL-2 associated cell death regulator
                                                07-OCT-1998
                                                                                                       AAW61315 standard; Protein;
                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 3; Fig 1; 130pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Korsmeyer SJ
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                                                                                                                                                                        Ch 100.0%; Score 138; DB 17; Similarity 100.0%; Pred. No. 1.4e-13; 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                         204
                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94US-0333565
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38..61
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191..19
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                                                                                                         204
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                                                                                                                                                                                                                                                            Length
                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                               204;
                                                                                                                                                                                                                                   0,
Gaps
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Mutant BCL-XL/BCL-2 associated cell death regulator #1.

Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD protein;

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RESULT
AAW61316
ID AAW6
XX
XX
AC AAW6
XX
DT 07-C
XX
DE Muta
XX
Muri
                                                                                                                                                                                                                                                                                                                                                                                                CC The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell composition 112 and/or 136, relative to the murine BAD 204 as sequence. The present sequence is the murine BAD protein also described are: (1) creases intracellular delivery. Mutant BAD protein sequences cell viability; (2) cc fragments of mutant BAD protein able to decrease cell viability; (2) cc fusion proteins of mutant BAD protein able to decrease cell viability; (2) cc fusion proteins of mutant BAD proteins are used to treat increases intracellular delivery. Mutant BAD proteins are used to treat cc prevent diseases associated with reduced apoptosis, e.g. cancer, cc viral infection, lymphoproliferation, arthritis, infertility, created to proteins and autoimmune disease. Polynucleotide sequences encoding cmutant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful cell interestive amounts of phosphorylated and noncephorylated BAD, by usual immunoassays. Mutant BAD proteins have composphorylated BAD, by usual immunoassays. Mutant BAD proteins have composphorylated and the specified Ser, forming a product that does not cell heterodimerise with BCL-2 or BCL-XL but instead binds to 14-3-3 family certains in the cytosol, thus promoting cell survival. The mutants with car substituted cannot bind 14-3-3.
                                                                                                                                                                                                                                                                                                                                                                             В
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                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                     07-OCT-1998
                                                                                                      AAW61316;
                                                                                                                                       AAW61316 standard; Protein; 204 AA
                                                                                                                                                                                                                                                                                                                                                                             Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful for, e.g
viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1998-261422/23.
N-PSDB; AAV27833.
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                                                                                                                                                                                                                    (UNIW ) UNIV WASHINGTON
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                                                                                                                                                                                                                                                                                           26;
                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                                                                                                                                                             204
                                                                                                                                                                                                                                                                                           Conservative
                                                                   (first entry)
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                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                           Score 138; DB 19;
Pred. No. 1.4e-13;
                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                        Length 204;
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RESULT 10
AAW61317
ID AAW613
XX
AC AAW613
XX
DT 07-OCT
XX
DE Mutant
XX
Murine
                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                       Qy
                                                                                                                                                                                                                                                                                                  The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell Cd death regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC present sequence represents a mutant BAD protein Also described are: (1) CC fision proteins of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein BAD proteins are used to treat CC or prevent diseases associated with reduced appotosis, e.g. cancer, CC viral infection, lymphoproliferation, arthritis, infertility, cancer, CC viral infection, lymphoproliferation, arthritis, infertility, cancer, CC viral infection, and autoimmune disease. Polymucleotide sequences encoding CC mutant BAD proteins for use as disease models or in drug screening. BAD cc proteins phosphorylated at specified Ser are used to screen for enhancers CC and inhibitors of serine-phosphatase. Inhibitors are potentially useful caping or isohaemic cell death. The apoptotic status of cells is caping or isohaemic cell death. The apoptotic status of cells is cell sering activity than wild-type BAD which can become CC phosphorylated on the specified Ser, forming a product that does not cell phosphorylated on the specified Ser, forming a product that does not consider the cytosol, thus promoting cell survival. The mutants with cCC ser substituted cannot bind 14-3-3.
                                                                                                                                                                                                                    Query Match
Best Local S
Matches 26
 Murine; mouse; BCL-XL/BCL-2 associated cell death regulator; BAD
                         Mutant BCL-XL/BCL-2 associated cell death regulator #2.
                                                    07-OCT-1998
                                                                             AAW61317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; Page 59; 95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-OCT-1996;
                                                                                                    AAW61317 standard; Protein;
                                                                                                                                                                                                                                                                               Sequence
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Synthetic.
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                                                                                                                                                               serine substituted mutant; apoptosis; cancer; viral infection
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DB; AAV27834.
                                                                                                                                                                                                               ch 100.0%; Score 138; DB 19; I Similarity 100.0%; Pred. No. 1.4e-13; 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                               204 AA;
                                                  (first entry)
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                                                                                                                                                                                                                                         Length 204;
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protein;
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                                                                                                            RESULT 11
AAW61318
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                                                                                                                                                                                                                                                                              Query Match
Best Local :
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                         Mutant BCL-XL/BCL-2 associated cell death regulator #3
 Murine; mouse; BCL-XL/BCL-2
                                                  07-OCT-1998
                                                                          AAW61318;
                                                                                                   AAW61318 standard; Protein;
                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 7; Page 60; 95pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1998-261422/23
N-PSDB; AAV27835.
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                                                                                                                                                                                                                           Local
                                                                                                                                                                                                               th 100.0%; Score 138; pB 19; Similarity 100.0%; Pred. No. 1.4e-13; 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                              204
                                                 (first entry)
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 associated cell death regulator;
                                                                                                    204
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Length 204; Indels

0;

Gaps

9

BAD protein;

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CC The present invention describes mutant BAD (BCL-XL/BCL-2 associated cell CC death regulator) proteins, having an amino acid other than Ser at CC position 112 and/or 136, relative to the murine BAD 204 as sequence. The CC position 121 and/or 136, relative to the murine BAD 204 as sequence. The CC forgments of mutant BAD protein able to decrease cell viability; (2) CC fusion proteins of mutant BAD protein BAD proteins are used to treat CC increases intracellular delivery. Mutant BAD proteins are used to treat CC increases intracellular delivery. Mutant BAD proteins are used to treat CC viral infection, lymphoproliferation, arthritis, infertility. Concer, CC viral infection, lymphoproliferation, arthritis, infertility. Infertility inflammation and autoimmune disease. Polynucleotide sequences encoding CC untrant BAD proteins can be used similarly by gene therapy or to produce transgenic animals for use as disease models or in drug screening. BAD CC proteins phosphorylated at specified Ser are used to screen for enhancers and inhibitors of serine-phosphatase. Inhibitors are potentially useful CC in treatment of excessive apoptosis such as AIDS, neurodegeneration, CC aging or ischaemic cell death. The apoptosis such as AIDS, neurodegeneration, CC determined by measuring relative amounts of phosphorylated and non-cc phosphorylated BAD, by usual immunoassays. Mutant BAD proteins have CC phosphorylated on the specified Ser, forming a product that does not construct death-promoting activity than wild-type BAD which can become CC phosphorylated cannot bind 14-3-3.
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99
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                                                                                                                                                                                                                                                                                                Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New mutant BAD polypeptide with phosphorylatable serine replaced useful for, e.g. treating reduced apoptosis such as in cancer or viral infection
                                   Murine BAD protein
                                                                                                                                        AAW58832 standard; protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 7; Page 60-61; 95pp;
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                                                                      23-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                  Sequence
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                                                                                                                                                                                                                          12
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DB; AAV27836.
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                                                                                                                                                                                                                                                                                                100.0%;
Similarity 100.0%;
26; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                    204
                                                                      (first
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  Bcl-XL/Bcl-2 associated
                                                                                                                                                                                                                                                                                                                                                                                  AA;
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                                                                                                                                             204
                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                            Score 138; DB 19;
Pred. No. 1.4e-13;
Mismatches 0;
  cell
                                                                                                                                                                                                                                                                                                                               Length 204;
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                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                               RESULT 1
AAB70369
  В
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                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local S
Matches 26
             Bcl-Xi/Bcl-2 associated cell death regulator: BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antilischaemic; vulnerary; cytostatic; antiviral; antiarthrittc; antiviral; antiarthrittc; antiviral; antiarthrittc; antiviral; cytostatic; apoptosis inducer; apoptosis inhibitor; cancer; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunoseficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infectility; lymphoproliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim
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This sequence represents a novel serine-phosphorylated protein. BAD (Bcl-X/Bcl-2 associated cell death regulator). The serine residue is phosporylated in a post-translational modification and allows binding to the 14-3-3 protein which is a signal transduction regulator. Modulators of phosphorylated BAD, which act through inhibition/activation of a phosphoserine phosphatase, are useful for preventing/treating increased/decreased apoptosis in a cell. The increased apoptosis may result from immunodeficiency diseases, sensecence, neurodegenerative disease, ischaemic cell death, reperfusion cell death, infertility and wound-healing. Decreased apoptosis may result from canocer, viral infection, lymphoproliferative conditions, arthritis, infertility, hosphorylated compared to unphosphorylated BAD polypeptide and/or total phosphorylated compared to unphosphorylated BAD polypeptide and/or total BAD in a cell is useful for determining the apoptotic state of a cell.
                                                                                                                                                                                                                                                                                                                                                                                   Serine-phosphorylated Bel-X-1/Bel-2 Associated cell Death regulator polypeptide - useful for modulation of apoptosis associated with, e.g. cancer and immunodeficiency diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-SEP-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 serine phosphorylation; post-translational modification; apoptosis; signal transduction regulator; phosphoserine phosphatase; senescence; immunodeficiency disease; neurodegenerative disease; infertility; cancer, viral infection; lymphoproliferative condition; arthritis; inflammation; autoimmune diseases.
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-207049/18.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              12-MAR-1998.
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                                                                                                                                                                                                                                                                                                                                               3; Fig 8; 6lpp; English.
204 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9605-0707868
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Longer murine BAD mutant amino acid sequence SEQ ID NO: 2.
                  02-MAY-2001 (first entry)
                                                    AAB70369 standard;
                                                                                                ch 100.0%;
I Similarity 100.0%;
26; Conservative (
                                                    protein;
                                                     204
                                                                                                                                  0
                                                                                                                                  Score 138; D
Pred. No. 1.4
D; Mismatches
                                                     ₹
                                                                                                                                  DB 19;
.4e-13;
s 0;
                                                                                                                                                   Length
                                                                                                                                    Indels
                                                                                                                                                     204;
                                                                                                                                   ;0
                                                                                                                                    Gaps
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The present invention describes an isolated or synthetic polypeptide (I) comprising a less than fill length amino acid sequence of a mutant CC Sci-XL/Rcl-2 associated cell death regulator polypeptide (BAD) or its CC fragment, which contains amino acid substitutions at Serill of a human CC BAD, Seril5 of a murine BAD (1) proper murine BAD) or Seril3 of a murine BAD (1) proper murine BAD) or Seril3 of a murine BAD (1) proper murine BAD) or Seril3 of a murine BAD (1) proper murine BAD) or Seril3 of a murine BAD (1) proper murine BAD (2) proper murine BAD (3) proper murine BAD (4) proper murine BAD mutant amino acid sequence from the present collaboration on the present sequence represents a specifically invention and cutofiamure diseases. The present sequence represents a specifically control invention and murine BAD mutant amino acid sequence from the present collaboration and subolimine diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 100.0%; Score 138; DB 22; Best Local Similarity 100.0%; Fred. No. 1.4e-13; Matches 25; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                0220
                                    Mouse: Bad-DTTR: apoptosis; cancer; spinal muscular atrophy; diphtheria toxin receptor binding domain; DTR; neoplasm; tumour; hyper-proliferation; Alzhelmer's disease; neurodegenerative disorder; translent ischaemic neuronal injury; stroke; spinal cord injury; Huntington's disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New mutant Bc1-XL/Bc1-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seri13.
  Chimeric - Mus sp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 4; Page 148; 157pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus.
Synthetic.
                                                                                                                                                           Bad-DTTR apoptosis-modifying fusion protein.
                                                                                                                                                                                                  31-MAY-2001 (first entry)
                                                                                                                                                                                                                                                                                      AAU00220 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (APOP-) APOPTOSIS TECHNOLOGY INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-MAY-2000; 2000WO-US11864
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                                                                                                                                                                                                                                                                                      567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 204;
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RESULT 1
AAW32476
ID AAW3
XX AAW3
AC AAW3
XX 15-J
XX 15-J
XX BBC6
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                                                                                                                                                                                                                                                                                                                                                                                                             The sequence represents the amino acid sequence of Bad-DTTR apoptosis-
cc modifying fusion protein comprising Bad gene sequence fused via a short
cc linker to diphtheria toxin translocation domain (DTTR). The
cc functional apoptosis-modifying fusion protein is capable of binding a
cc target cell and integrating into or crossing a cellular membrane of the
cc target cell and the Bcl-Xi domain, which modifies an apoptotic response
cc target cell and the Bcl-Xi domain, which modifies an apoptotic response
cc target cell and the Bcl-Xi domain, which modifies an apoptotic response
cc inhibiting or enhancing) apoptosis in a target cell, such as neuron,
cc imphocyte, cancer, neoplasm, macrophage, epithelial, stem, tumour or
dyperropiliferative cell or an adipocyte. It is also useful for reducing
cc apoptosis in a subject after translent ischaemic neuronal injury
cc especially spinal cord injury. The fusion protein may be used to treat
cc various diseases and injury conditions through inhibition or enhancement
cc such as Alzebarer's disease, Huntington's disease, spinal muscular
atrophy, stroke episodes and unregulated cell growth as in tumours and
cc various cancers. The apoptosis modifying fusion protein can be delivered
cc effectively throughout the body and targeted to selective tissue and
                                                                                                                                                                                                                                                                                                        Query Match
Best Local S
Matches 26
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Region
BBC6 protein for regulating cell death
                                         15-JAN-1998
                                                                                                                       AAW32476 standard;
                                                                                   AAW32476;
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2001-218343/22.
N-PSDB; AASO0248.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            16-AUG-1999;
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                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                        ch 100.0%; Score 138; DB 22; I Similarity 100.0%; Pred. No. 4.3e-13; 26; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                          567 AA;
                                      (first entry)
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                                                                                                                       Protein;
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Length 567; Indels

0; Gaps

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Novel fusion protein for modifying apoptosis in target cell and reducing apoptosis after transient ischemic neuronal injury, has two domains which targets protein to a cell and modifies apoptotic response of cell.
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Claim 4; Page 59-61; 65pp; English.
                                                                                                                                                                                                                                                                                                                                               (HARD ) HARVARD COLLEGE.
(USSH ) US DEPT HEALTH & HUMAN SERVICES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
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                                                                                                                       Query Match 82.6%; Score 114; DB 18; Length 166; Best Local Similarity 91.7%; Pred. No. 6.1e-10; Matches 22; Conservative 0; Mismatches 2: Indels
                                                                                                                                                                                                                     The present sequence represents a protein of 166 amino acids. The sequence is disclosed as being a protein called BBC6 which regulates cell death through interaction with BC1-2. The DNA may be used for the production of the recombinant protein, which can be used in unspecified therapeutic or diagnostic procedures, as a molecular weight marker, and to raise antibodies that can be used in unspecified diagnostic or therapeutic applications and to reduce or eliminate the biological activity of the BBC6 protein in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             18-JUN-1996;
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N-PSDB; AAT91561.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                 Claim 1; Column 11-12; 7pp; English.
                                                                                                                                                                                                                                                                                                                                                                            Isolated BBC6 gene - encodes a protein that regulates cell death through interaction with {\it Bcl-2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Xudong Y;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (CLON-) CLONTECH LAB INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BBC6 gene; cell death; cell cycle; Bcl2; human.
                                                                 166 AA;
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No. is the number of results predicted by chance to have a greater than or equal to the score of the result being printed, s derived by analysis of the total score distribution.
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1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
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Copyright (c) 1993 - 2000
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US-08-733-505A-12
US-08-733-505A-13
US-08-733-505A-14
US-08-733-505A-14
US-08-717-123-3
US-08-985-335-7
US-08-985-335-7
US-09-410-372-1
US-08-333-565-10
US-08-333-565-10
US-08-333-565-55
US-08-733-505A-56
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US-08-733-505A-69
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US-09-388-774-79
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NAMESKEY: Protein
LOCATION: 1..204
OTHER INFORMATION:
OTHER INFORMATION:
US-08-333-565-2
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 Query Match
Best Local S
Matches 26
                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Townsend and Townsend Khourie and STREET: 379 Lytton Avenue CITY: Palo Alto STATE: California COUNTR: Palo Alto STATE: California COUNTR: US ZIP: 94301

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PATENTIAN APPLICATION DATA: BAPLICATION NUMBER: US/08/333,565

FILING DATE: 31-OCT-194

CLASSIFICATION: 4435
AFTONNEY/AGENT INFORMATION: NAME: Smith, William M REGISTRATION NUMBER: 30,23
DEFERENCE ADDRESSEE: 30,23
DEFERENCE ADDRESSEE: 30,23
DEFERENCE ADDRESSEE: 30,23
DEFERENCE ADDRESSEE: 315726A-000700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/08333565
Patent No. 5622852
GENERAL INFORMATION:
                                                                                                                                                                                                                                          TELEPHONE: (415) 326-2400
TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie
STREET: 379 Lytton Avenue
CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 15
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: Bcl-x/Bcl-2
TITLE OF INVENTION: REGULATOR
                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                                                                 LENGTH: 204 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
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Similarity 100.
26; Conservative
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                                                                                         /note= "Deduced amino acid sequence
of mouse BAD."
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US-08-497-312-19
US-08-718-738-18
US-09-221-844-18
US-09-221-844-18
US-09-29-843A-40
US-09-293-11153-40
US-09-359-161-7
US-08-937-180-170
US-08-937-362-170
US-08-937-362-170
US-08-937-362-94
US-08-937-362-94
US-08-937-362-94
US-08-937-362-94
US-08-937-362-94
US-09-358-585-94
    0;
                  Score 138;
Pred. No.
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    Mismatches
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170, Appl
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Result No.

Score

Query Match

Length

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Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 st

Total number of

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US-08-661-479-2
Sequence 1, Application US/08733505A

Patent No. 5856445

Patent N
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Best Local :
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CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION UNBER: US 08/333,565
FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15726A-000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
TELEPAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy
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CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie and Crew
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME/KEY: Protein LOCATION: 1..204 OTHER INFORMATION: OTHER INFORMATION:
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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o. 5834209
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of mouse BAD."
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; TOPOLOGY: 1; MOLECULE TYPE: US-08-733-505A-1
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Patent No. 5856445
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Best Local Similarity
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TELEPHONE: (314) 727-5188
TELEPAX: (314) 727-6092
INFORMATION FOR SEO ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
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                                                                                            COMPUTER READABLE FORM:
MEDLIM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/733,505A
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
CURRENT APPLICATION DATA:
             CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,
                                                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS
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TITLE OF INVENTION:
NUMBER OF SEQUENCES:
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FILING DATE:
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
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CORRESPONDENCE ADDRESS:
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ZIP: 631
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STATE: MISSOURI
                                                                                  FILING DATE:
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REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96
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STATE: MISSOURI
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REFERENCE/DOCKET NUMBER:
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SERINE SUBSTITUTED MUTANTS OF

BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR

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US-08-733-505A-13
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RESULT
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                                                                                                                                                                                                                                                           TELEFAX: (314) 727-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
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TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                            MOLECULE TYPE:
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                                                                                                                                                                                     TYPE: amino STRANDEDNESS: TOPOLOGY: li
                                        140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
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7733 FORSYTH BLVD., SUITE 1400
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Pred. No. 4
                                                                                                        Score 138;
Pred. No.
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US-08-717-123-3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local
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APPLICANT: KORSME
                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (314) 727-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 530
ATFORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9654
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOSTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acid
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CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SCETAL SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
                                                                                                                                                                                                           NUMBER OF SEQUENCES: 1
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                            APPLICANT: Horne, William A.
APPLICANT: Oltersdorf, Tilman
TITLE OF INVENTION: Human BAD Polypeptides, I
TITLE OF INVENTION: Acids and Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
                                                                                                                                        STREET: 45, COUNTY: San Diego
                                                                                                                                                                                                                                                                                                                                                                                                                                          140 NLWAAQRYGRELRRMSDEFEGSFKGL 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                         COUNTRY:
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                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 NLWAAQRYGRELRRMSDEFEGSFKGL 26
                                                                                                                                                                                                                                                                                                                                    3, Application US/08717123
>. 5965703
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                                                                                                           92122
                                                                                                                                          California
                                                                                                                                                                          E: Campbell and Flores
4370 La Jolla Village Drive, Suite 700
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                                                                                                                       United States
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727-14:
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Pred. No. '
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                                                                                                                                                                                                                                                                Encoding Nucleic
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                                                                                                            ; MOLECULE TYPE: protein US-08-665-617-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acide
TYPE: amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2, Application US/08665617
Patent No. 5663316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 97.8
Best Local Similarity 96.3
Matches 25; Conservative
                                Matches
                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -08-665-617-2
                                                                                                                                                                                                                    TELEFAX: (352) 372-5800 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: Patentin Release #1.0.
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-
TELECOMMUNICATION INFORMATION:
TELEPHONE: (619) 535-9001
                                                                                                                                                                                                                                               NAME: 5811wanchik, David R.
REGISTRATION NUMBER: 31.794
REFERENCE/DOCKET NUMBER: CL
TELECOMMUNICATION INFORMATION:
TELEPHONE: (352) 375-8100
                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 2424 ....
STREET: Gainesville
CITY: Gainesville
CTATE: Fiorida
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
                                                                                                                                          TOPOLOGY: 11
                                                                                                                                                                       LENGTH: 166 amino acide TYPE: amino acid
                                              Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
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 1 NLWAAQRYGRELRRMSDEFEGSFK 24
                                                                                                                                                                                                                                                                                                                                                     PLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                        ASSIFICATION: 530
RNEY/AGENT INFORMATION:
                                              Similarity
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amino acid
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2421 N.W. 41st Street, Suite A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               USA
                               Conservative
                                                                                                                                        ss: single
linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gene and Protein for Regulation of Cell Death
                               82.6%; Score 114; DB 1;
91.7%; Pred. No. 1.8e-10;
tive 0; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                    Release #1.0, Version #1.25
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Pred. No. 1
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                                                            Length 166;
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                               Gaps
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; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-717-123-2
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Best Local Similarity 91.,
"...rches 22; Conservative
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Patent No.
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Patent No.
                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Hillma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (619) 535-899
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STREET: 43/
STREET: 43/
CITY: San Diego
STATE: California
STATE: United States
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA;
APPLICATION UNMERE: 0408/717 123
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CORRESPONDENCE ADDRESS:
ADDRESSE: Campbell and Flores
STRRET: 4370 La Jolla Village Drive, Suite 700
                                                                   NUMBER OF SEQUENCES: S
                                                                                                     APPLICANT: Yue, Henry
APPLICANT: LAL, Preeti
APPLICANT: Shah, Purvi
APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/0:
FILING DATE: 20-SEP-1996
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Human BAD Polypeptides, I TITLE OF INVENTION: Acids and Methods of Use
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               101 NLWAAQRYGRELRRMSDEFVDSFK 124
                                                                                                                                                                                                                                                                                                                                                       103 NEWAAQRYGREERRMSDEFVDSFK 126
STATE:
                               ADDRESSEE: Incyte Pharmaceuticals, Inc
STREET: 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Campbell, Cathryn A. REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-
                                                                                                                                                                                                                                                                                                                                                                            1 NLWAAQRYGRELRRMSDEFEGSFK 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ELEPHONE:
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5. 5965703
                                                                                                                                                                                                                                                   , Application US/08985335 6080847
                 Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     168 amino acids
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                                                                                                                                                                                                              Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (619)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     19) 535-9001
) 535-8949
Q ID NO: 2:
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                                                                                                                                                                                                                                                                                                                                                                                                                                            82.6%;
91.7%;
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                                                                                                                                                                                                                                                                                                                                                                                                                        Score 114; DB 2;
Pred. No. 1.8e-10;
0; Mismatches 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 168;
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0; Gaps

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LENGTH: 168 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
INMEDIATE SOURCE:
LIBRARY: SYNORABO1
LIBRARY: SYNORABO1
US-08-985-335-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLIANCE
FILING DATE:

ATTORNEY/AGENT INFORMATION:
NAME: Bilings, Lucy J.

REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-04
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TELEPHONE: 650-845-4166
INFORMATION FOR SED ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENOTH: 168 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 82.6%;
Best Local Similarity 91.7%;
Matches 22; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 7, Application Patent No. 6080847 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            08-985-335-7
                                                 OPERATING SYSTEM: DOS
SOFTWARE: PASISSO for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/985,335
FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
                                                                                                                                                                                     ZIP: 94304
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 9
CORRESPONDENCE Incyte Pharmaceuticals, Inc.
ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/98
FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Hillman, Jennifer L. APPLICANT: Yue, Henry
APPLICANT: Lal, Preeti
APPLICANT: Shah, Purvi
APPLICANT: Corley, Neil C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: COTTEY, Nell C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    103 NLWAAQRYGRELRRMSDEFVDSFK 126
                                                                                                                                                 COMPUTER: IBM Compatible OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                             STREET: 3174 POI
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM CO
OPERATING SYSTEM:
SOFTWARE: FastSE
                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 NLWAAORYGRELRRMSDEFEGSFK 24
                                      APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Application US/08985335
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Pred. No. 1
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                                                                   APPLICATION UNMBER: 06/985,335
APPLICATION UNMBER: 06/985,335
APPOPURE/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0421
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
TELEPHONE: 650-855-0555
TELEPHONE: 650-851-0555
TELEPHONE: 650-851-0555
INFORMATION FOR SED ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 1
Patent No.
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Best Local S
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TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Shah, Puz
APPLICANT: Corley, &
TITLE OF INVENTION:
TITLE OF INVENTION:
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TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSED for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/410,372
FILING DATE:
STRANDEDNESS: sing
TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: SYNORABO
                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Billings, Lucy J. REGISTRATION NUMBER: 36,749 REFERENCE/DOCKET NUMBER: PF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 3174 POI
CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ADDRESSEE: Incyte Pharmaceuticals, Inc STREET: 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
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3, 6281334
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amino acid
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91.7%; Pred. No. 1.8e-10;
tive 0; Mismatches 2
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TOPOLOGY: linear IMMEDIATE SOURCE: LIBRARY: GenBank CLONE: 1683637 US-09-410-372-7
RESULT 14
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Best Local :
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Best Local :
                                                                                                                                                                                        Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEPAX: 650-845-910 NO: 7: INFORMATION FOR SEQ ID NO: 7: SEQUENCE CHARACTERISTICS: LENGTH: 168 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: PF
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
OPERATING SYSTEM: DOS
SOFTWARE: FRANCESEQ for Windows Version 2.0
CURRENT APPLICATION NOMBER: US/09/410,372
APPLICATION NUMBER: US/09/410,372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Dr.
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PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/985,335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION: NAME: Billings, Lucy J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                103 NLWAAORYGRELRRMSDEFVDSFK 126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
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CITY: Palo Alto
STATE: CA
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REGISTRATION NUMBER: 36,749
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ZIP: 94304
                                                                                                                               1 NLWAAQRYGRELRRMSDEFEGSFK 24
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INVENTION: PROTEI
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Lal, Preet1
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91.7%;
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91.7%;
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                                                                                                                                                                                                              Score 114; DB 4;
Pred. No. 1.8e-10;
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Pred. No. 1.8e-10;
0; Mismatches 2;
                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                       Length 168;
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INFORMATION FOR SEQ ID NO: 10

SEQUENCE CHARACTERISTICS:
LENGTH: 3 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-333-565-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READBLE FORM:

MEDLIM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: BM PC Compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-OCT-1994
CLASSIPICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15726A-000700
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 236-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-333-565-10; Sequence 10, A; Patent No. 562
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 15
US-08-661-479-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 10, App
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Best Local S
Matches 21
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COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
COMPUTER: IBM PC COMPATIBLE
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PALENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/661,479
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                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie and Crew
                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
TITLE OF INVENTION: BG1-X/bc.
TITLE OF INVENTION: REGULATOR
TOTAL OF SPONENCES; 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQUENCES: 5
CORRESPONDENCE ADDRESS:
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TITLE OF INVENTION: Bc1-x/Bc1-2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
                                                                                                                                                                                                                                    STREET: 379 Lytton Avenue CITY: Palo Alto STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 379 Lytton
CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                 COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
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Similarity 100.0%; Similarity 00,0%; Similarity 100.0%; Similarity 0; Simi
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/ENTION: Bc1-x/Bc1-2 ASSOCIATED CELL DEATH
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FILING DATE: 11-JUN-1995
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/333,565
FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: SMITH, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15726A-000700
FILECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
TELEPAX: (415) 326-2400
TELEPAX: (415) 326-2400
SEQUENCE CHARACTERISTICS:
LENGTH: 23 amino acids
TYPE: amino acids
STRANDEDNESS: single
TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-661-479-10
Search completed: September 20, 2002, 10:37:19 Job time: 407 sec
                                                                                                                                                                                                    Query Match 81.9%; Score 113; DB 2; Length 23; Best Local Similarity 100.0%; Pred. No. 2.8e-11; Matches 21; Conservative 0; Mismatches 0; Indels
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GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd

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Title:
Perfect score:
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Maximum DB
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Maximum Match 100%
Listing first 45 summaries
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       seq length:
seq length:
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1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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Match
       hits satisfying chosen parameters:
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Gapop 10.0 , Gapext
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inter-alpha-trypsi
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                                     RESULT 2

JOS575

Inter-alpha-trypsin inhibitor heavy chain 2 - golden hamster
C:Species: Mesocricetus auratus (golden hamster)
C:Species: Mesocricetus auratus (golden hamster)
C:Date: 23-Sep-1997 #sequence_revision 23-Sep-1997 #text_change 20-Jun-2000
C:Accession: JC5575; pc4485
C:Accession: JC5575; pc4485
C:Accession: JC575; pc4485
C:Accession: JC575; pc4485
C:Accession: JC575; pc4485
A:Filtle: Molecular cloning and sequencing of cDNAs encoding three heavy-chain pre sin inhibitor heavy chain family.
A:Filtle: Molecular cloning and sequencing of cDNAs encoding three heavy-chain pre sin inhibitor heavy chain family.
A:Filtle: Molecular cloning and sequencing of cDNAs encoding three heavy-chain pre sin inhibitor heavy chain family.
A:Filtle: Molecular cloning and sequencing of cDNAs encoding three heavy-chain pre sin inhibitor heavy-chain pre sin inhibitor heavy-chain special pression: JC5574; MUID:97420688
A:Filtle: Molecular trype: mRNA
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bad protein - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Accession: A55671
C;Accession: A55671
R;Yang, E; Zha, J; Jockel, J; Boise, L.H.; Thompson, C.B.; Korsmeyer, S.J.
A;Title: Bad, a heterodimeric partner for Bcl-x-L and Bcl-2, displaces Bax and A;Reference number: A55671; MUID:95136361
A;Accession: A55671
A;Accession: A55671; MUID:95136361
A;Status: preliminary; not compared with conceptual translation
A;Residues: 1-204 cyANy
A;Cross-references: GBLI37296; NID:9639778; PIDN:AAA64465.1; PID:9639779
C;Keywords: heterodimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             용
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three heavy-chain precu

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Matches Query Match Best Local

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Score 54; DB 2; Pred. No. 8.8; 5; Mismatches 1

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Length 946;

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G:Species: Mus musculus (house mouse)
G:Date: 15-Jul-1995 #sequence_revision 01-Sep-1995 #text_change 20-Aug-1999
G:Accession: S54354
R:Chan, P.; Risler, J.L.; Raguenez, G.; Salier, J.P.
Biochem, J. 306, 505-512, 1995
Biochem, J. 306, 505-512, 1995
A;Title: The three heavy-chain precursors for the inter-alpha-inhibitor family
A;Reference number, S54353; MUID:95194326
A;Recession: S54354
A;Recession: S54354
A;Recession: S54355
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c;Species: Mycobacterium tuberculosis
c;Date: 17-JU1-1998 #sequence_revision 17-Ju1-1998 *text_change 22-Oct-1999
c;Accession: D70760
R;Cole, S.T.; Brosch. R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, S.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.
Rajandraam, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barreil, B.G.
A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete genome
A;Reference number: A70500; MUID:98295987
A;Accession: D70760
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                A;Molecule type: mRNĀ
A;Residues: 1-946 <CHA>
A;Cross-references: EMBL:X70392; NID:g695633; PIDN:CAA49842.1;
C;Superfamily: inter-slpha-trypsin inhibitor complex component
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C: Genetics:
A: Gene: Rv2014
      -dehydro-3-deoxyphosphoheptonate aldolase (EC 4.1.2.15) ARO4 - yeast (Saccharomyoes cer
Alternate names: 3-deoxy-0-arabino-heptulosonate-7-phosphate synthase; DAHP synthase;
Species: Saccharomyces cerevisiae
                                                                                                                                                                                                                                                                  Query Match 38.4 Best Local Similarity 34.6 Matches 9; Conservative
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Residues: 1-223 -cO25-
Cross-references: GB:274025; GB:AL123456; NID:g3261586; PIDN:CAA98415.1; PID:e1299911
Experimental source: strain H37Rv
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Matches 10; Conservative
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212 NVWIIEPQGMRFLHVPDTFEGHFQGV 237
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A;Cross-references: SGD:S0000453; MIPS:YBR249c
A;Map position: 2R
C;Function:
C;Function:
A;Description: aldehyde-lyase; carbon-carbon lyase
A;Description: aldehyde-lyase; carbon-carbon lyase
A;Dethway; aromatic amino acid biosynthesis; shikimate pathway
A;Note: first step in shikimate pathway
A;Note: first step in shikimate pathway
C;Superfamily: phospho-2-dehydro-3-deoxyheptonate aldolase
C;Keywords: aldehyde-lyase; aromatic amino acid biosynthesis; carbon-carbon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A:Cross-references: EMBL:KG1107
R;Kuenzler, M.; Balmelli, T.; Egli, C.M.; Paravicini, G.; Braus, G.H.
J. Bacteriol. 175, 5548-5558, 193
A:Title: Cloning, primary structure, and regulation of the HIS7 gene encoding A:Reference number: A48651; MUID:93374850
A:Accession: B48651
A:Status: preliminary
A:Molecule type: DNA
A:Molecule type: DNA
A:Residues: 352-370 < KU2>
A:Cross-references: GB:X61107
C:Comment: This enzyme catalyzes the condensation of phosphoenolpyruvate and condensatios:
A42095 AFBULT 6
A42095 AFBULTALA3 (AP3) - AFBULDOPSIS THBILANA
RIOTAL homeotic protein APETALA3 (AP3) - AFBULDOPSIS THBILANA
RIOTAL homeotic protein APETALA3; MADS-box regulatory protein AP3
C:Species: Arabidopsis thaliana (mouse-ear cress)
C:Date: 04-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 21-Jul-2000
C:Accession: A42095; S52633; T47593
R:Jack, T., Brockman, L.L.; Meyerowitz, E M
Cell 68, 683-697, 1992
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                                                                                                                                                                                                                                                                     80 DLEAAQEYALRLKKLSDELKG
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Length 370; Indels 0: Gaps 0

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A;Map position: 3
A;Introns: 63/2; 85/3; 106/2; 139/3; 153/3; 168/3
A;Note: T12E18.30
C;Superfamily: transcription factor squa; serum response factor DNA-binding C;Keywords: DNA binding; nucleus; transcription regulation F;2-57/Domain: serum response factor DNA-binding domain homology <SRF>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               spermidine/putrescine ABC transporter [imported] - Halobacterium sp. NRC-1
C;Species: Halobacterium sp. NRC-1
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
C;Accession: C84338
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-63 <OKA>
A;Cross-references: GB:D21125
A;Cross-references: GB:D21125
R;Bloecker, H.; Mewes, H.W.; Lemcke, K.; Mayer, K.F.X.; Quetier, F.; Salanoubat M.Mewes, submitted to the Protein Sequence Database, March 2000
A;Reference number: Z24469
A;Accession: T47593
                                                                                                                                                                                                                                                                                                                                                  A;Status: preliminary
A;Molecule type: DNA
A;Residues: I-374 <570>
A;Cross-references: GB:AE004437; NID:g10581314; PIDN:AAG20071.1; GSPDB:GN00138
C;GenetLcs
A;Gene: potA2
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Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lowe, T.M.; Li A;Title: Genome sequence of Halobacterium species NRC-1.
A;Reference number: A84160; MUID:20504483
A;Accession: C84338
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A;Experimental source: petals, stamens
A;Mote: sequence extracted from NCBI backbone (NCBIN:82520, NCBIP:82521)
R;Okamoto, H; Yano, A; Shiraishi, H; Okada, K; Shimura, Y.
Plant Mol. Biol. 26, 465-472, 1994
A;Title: Genetic complementation of a floral homeotic mutation, apetala3, with an Arabid A;Reference number: $52633; MUID:95036018
A;Accession: $52633
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A; Residues: 1-232 <BLO>
A; Cross-references: EMBL: AL132971
A; Experimental source: cultivar Columbia; BAC clone T12E18
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                                         γ
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A; Residues: 1-232 <JAC>
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11 ELRRMSDEFEGSF 23
                                                                                                                                  Local Similarity 76. les 10; Conservative
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76.9%;
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; Pred. No. 5.8;
3; Mismatches
                                                                                                                                  Score 50; DB Pred. No. 13; 1; Mismatches
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C;Genetics:
A;Gene: F3N23.1
A;Map position:
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                                                                                                          A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-516 <STC
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                                                                                                  A; Cross-references:
                               Query Match
Best Local S
Matches 12
163 NLFWAERFGKQYLQMNDLWVKHCGISHTGSFKDL 196
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               1 NIWAAQRYGREIRRMSD------EFEGSFKGL
                               1 Similarity
12; Conserv
                                Conservative
                                                                                                           <STO>
                                                                                                 GB:AE005173; NID:g5903070; PIDN:AAD55628.1; GSPDB:GN00141
                                       35.2%;
                              Score 50; DB Pred. No. 19; 7; Mismatches
                                      DB
19;
               26
                                                2;
                                7;
                                                Length 516;
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.,.Luuss-references: GB:AE004535; GB:AE004091; NID:g9946936; PIDN:AAG04420.1; GSPDB:GN
A;Experimental source: strain PAO1
C;Genetics:
A;Gene: PA1031
                                                                                                                                                                                                                                                                                Conserved hypothetical protein PA1031 [imported] - Pseudomonas aeruginosa (strain PAO C;Species; Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000 C;Accession: E83517 R;Stover; C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, P.; Hickey, M.J., adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas, A.; Larbig, K.; L.; Lory, S.; Olson, M.V. Nature 406, 959-964, 2000 A;Title: Complete genome sequence of Pseudomonas aeruginosa PA01, an opportunistic pa A;Reference number: A82950; MUID:20437337 A;Recession: E83517 A;Status: preliminary A;Molecule type: DMA A;Residues; 1-453 <570> A;Cross·references; GB:AE004535; GB:AE004091; NID:g9946936; PIDN:AAG04420.1; GSPDB:GN A;Parentmental Sequence of Pseudomonas aeruginosa PA01.
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65 WASERQGREEELRRLASE
                                          3 WAAORYGR--ELRRMSDE 18
                                                                                           l Similarity 55.
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82
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23;
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                                                                                              2;
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RESULT 10 S40376 Ig kappa chain -

human

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transforming protein homolog MRAS3 - Rhizomucor racemosus
C;Species: Rhizomucor racemosus
C;Species: Rhizomucor racemosus
C;Species: Rhizomucor racemosus
C;Date: 28-Mar-1991 #sequence_revision 28-Mar-1991 #text_change 19-Jan-2001
C;Accession: C36365
R;Casale, W.L.; McConnell, D.G.; Wang, S.Y.; Lee, Y.J.; Linz, J.E.
MACI, Cell. Biol. 10, 6654-6663, 1990
A;Title: Expression of a gene family in the dimorphic fungus Mucor racemosus which exhib
A;Reference number: A36365; MUID:91061774
A;Accession: C36365
A;Accession: C36365
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C;Date: 06-Mar-1994 *sequence_revision 26-May-1995 *text_change 21-Jan-2000
C;Accession: S40376
R;Klein, R, Jaenichen, R,; Zachau, H.G.
Eur. J. Immunol. 23, 3248-3271, 1993
A;Title: Expressed human immunoglobulin chi genes and their hypermutation. A;Reference number: S40312; MUID:94080891
A;Reference number: S40312; MUID:94080891
A;Accession: S40376
A;Status: preliminary: translation not shown
A;Molecule type: mRNA
A;Residues; 1-134 <KLEP
A;Cross-references: EMBL:X72486; NID:9441440; PIDN:CAA51154.1; PID:9441441
C;Superfamily: immunoglobulin v region: Immunoglobulin homology
C;Keywords: heterotetramer; immunoglobulin
C;Keywords: heterotetramer; immunoglobulin
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Plant Physiol. 112, 1391-1396, 1996

A;Title: CDNA isolation and gene expression of maize annexins P3
A;Reference number: Z14796; MUID:97092863

A;Recession: T02975

A;Status: preliminary; translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Molecule type: mRNA

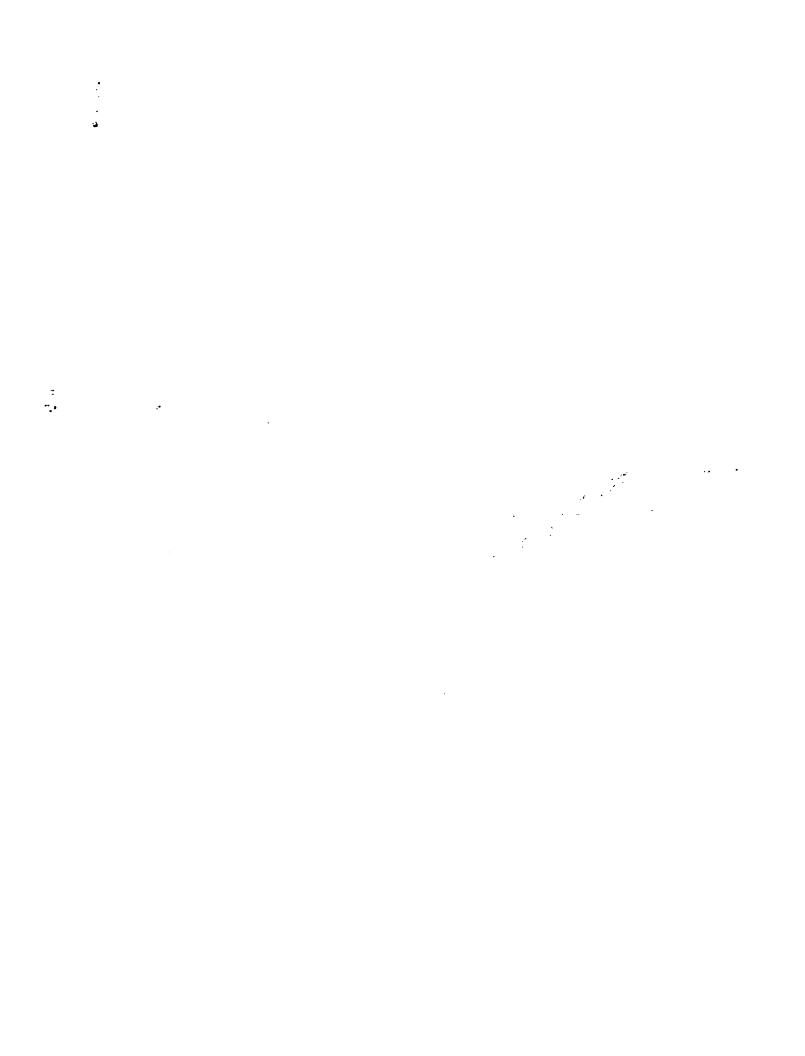
A;Residues; 1-314 (EMAT)

A;Cross-references: EMBL:X98245; NID:g1370602; PIDN:CAA66901.1;
A;Experimental source: cultivar clipper; root tip
C;Superfamily: annexin repeat homology
F;14-85/Domain: annexin repeat homology <AXR>
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;Species: Zea mays (maize)
;Date: 24-Mar-1999 #sequence_revision 24-Mar-1999 #text_change 21-Jul-2000
;Accession: T02975
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54 AEAYGKELLRALGDEIHGKFE 74
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Pred. No. 19;
4; Mismatches
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Pred. No. 7
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threbline synthase (EC 4.2.99.2) precursor - Arabidopsis thaliana N. N. Alternate names: protein F27813.80
N. Alternate names: protein F27813.80
C. Species: Arabidopsis thaliana (mouse-ear cress)
C. Species: Alloun-1999 #sequence_revision 11-Jun-1999 #text_change 07-Dec-1999
C. Accession: T08545; S71356; S71357
R. Bevan, M.; Zimmermann, W.; Gruenetsen, A.; Wambutt, R.; Bancroft, I.; Mewes, i submitted to the Protein Sequence Database, May 1999
A; Reference number: Z16442
A; Accession: T08545
A; Molecule type: DNA
A; Residues: 1-526 <ABV
A; Cross-references: EMBL:AL050352; GSPDB:GN00062; ATSP:F27B13.80
A; Cross-references: EMBL:AL050352; GSPDB:GN00062; ATSP:F27B13.80
A; Curien, G: Dumas, R.; Rayanel, S.; Douce, R.
A; F1tle: Characterization of an Arabidopsis thaliana cDNA encoding an S-adenosyl A, Reference number: S71362; MUID:96314555
A; MCCession: S71362
A; MCCession: S71362
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A:Molecule type: DNA
A:Residues: 1-220 <ARN>
A:Cross-references: GB:AE001772; GB:AE000512; NID:g4981693; PIDN:AAD36230.1; PID:g498
A:Experimental source: strain MSB8
C:Genetics:
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C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 21-Jul-2000
C;Accession: F72299
R;Nelson, K. E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft,
Garrett, M.M.; Stewart, A.M.; Cotton, M.D.; Pratt, M.S.; Phillips, C.A.; Riv
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F:123-126/Region: GTP-binding MXXD motif
F:153-155/Region: GTP-binding SAK/L motif
F:23,24,42,123,124,126,153/Binding site: Mg-GTP (Lys,
                                       A; Molecule type: mRNA
A; Residues: 'L', 3-526 <CUR>
A; Cross-references: EMBL:L41666;
A; Accession: $74307
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A:Tille: Evidence for lateral gene transfer between Archaea and Bacteria from
A:Reference number: A72200; MUID:99287316
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C;Superfamily: yeast SOL3 protein
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3 caenorhabdi
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3 homo sapien
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homo sapien
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BAD_MOUSE STANDARD; PRT; 204 AA.

ID BAD_MOUSE STANDARD; PRT; 204 AA.

AC Q61337;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-MAR-2002 (Rel. 41, Last annotation update)
DE BC12-antagonist of cell death (BAD) (Bc1-2 binding DE 6) (Bc1-XL/Bc1-2 associated death promoter).
        MUTAGENESIS OF SERINE RESIDUES.
MEDLINE-20403302; PubMed-10949026;
Datta S.R., Katsov A., Hu L., Petri
Greenberg M.E.;
"14-3-3 proteins and survival kina.
                                                                                                                                                                                                                                                                                                                                                                                                                       PHOSPHORYLATION, AND MUTAGENESIS OF SER-11.
MEDILNE-98022383; PubMed-9381178;
Del Peso L., Gonzalez-Garcia M., Page C., I
"Interleukin-3-induced phosphorylation of i
Kinase Akt.",
Science 278:687-689(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Brain, and Thymus;
MEDLINE-95136361; PubMed=7834748;
Yang E., Zha J., Jockel J., Boise L.H., Thompson C.B., Korsmeyer S.J.;
"Bad, a heterodimeric partner for Bcl-XL and Bcl-2, displaces Bax and promotes cell death.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    promotes cell death.";
Cell 80:285-291(1995).
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Mammalia; Eutheria;
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APJ_MOUNG
APJ_HUMAN
APJ_HUMAN
APJ_HACMU
ACEK_SALTY
MDLI_YEAST
ZO3_MOUSE
THIE_PYRAB
REBA_YEAST
YEAST
YO30_NPVAC
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Herrera R., Nunez G.; BAD through the protein

Yaffe M.B.,

component

Result No.

Score

Match Query

Length

448445534 44884477

4FONBBBBHFFWWQQQQQQQQQQ

44.5 44.5 44 44

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Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 26; Conservative (
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DOMAIN
MOD_RES
MOD_RES
MOD_RES
MOD_RES
MUTAGEN
                                                                                       D'Agata V., Magro G., T. "Cloning and expression the rat brain.";
                                                                                                                                                                                                                                                                                                                                                                                                    BAD_RAT STANDARD; PRT; 205 AA 035147, 070256; 09574X1; 16-0CT-2001 (Rel. 40, Created) 116-0CT-2001 (Rel. 40, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update BC12-antagonist of cell death (BAD) (BC1-2 6), (BC1-xL/BC1-2 associated death promoter)
                                                                                                                                                                                                   HBu S.Y., Kaipia A., Zhu L., Hsueh A.J.W.; "Interference of BAD (Bcl.xL/Bcl-2-associated death apoptosis in mammalian cells by 14-3-3 isoforms and mol. Endocrinol. 11:1858-1867(1997).
                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
MCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
 Hamner
                                              SEQUENCE FROM N.A.
                                                                                                                                       MEDLINE-98194755;
                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                 MEDLINE-98034386; PubMed-9369453;
Hsu S.Y., Kaipia A., Zhu L., Hsue
                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A., AND MUTAGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                140
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 NLWAAQRYGRELRRMSDEFEGSFKGL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ser-136 is the major site of AKT/PKB phosphorylation, major site of protein kinase A (CAPK) phosphorylation. SIMILARITY: CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 (BH3). SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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147 161
112 112
136 136
155 155
115 136
136 136
155 155
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                                                                             243:137-140(1998).
                                                                                              PubMed=9535132;
G., Travell S., Musco S., Cavallaro
ession of the programmed cell death r
PubMed=11161472;
U., Yu L.~Y., Sun
                                            (ISOFORMS ALPHA
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Pred, No. 8.6e-14;
Mismatches 0;
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Y.-F.,
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(Bcl-2 binding
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regulator
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RT their interaction with Bc1 w in sympathetic neurons.";

RL Mol. Cell. Neurosci. 17:97-106(2001)

C-1 FUNCTION: Promotes cell death. Successfully competes for the 10 february of the services of heterodimerization of these proteins with BAX. Can reverse the 10 death repressor activity of Bc1-x(L), but not that of Bc1-2 (By 10 february). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

C-1 SUBUNIT: Forms heterodimers with the anti-apoptotic proteins, Bc1-12 (Subunitarity). Appears to act as a link between growth factor 113/Ser-137 phosphorylated form binds protein $100AlO. The Ser-137 yhosphorylated form binds protein $100AlO. The Ser-113/Ser-137 phosphorylated form binds 14-3-3 proteins.

C-1 SUBCELIULAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm (By similarity). Alternative splicing. They differ only in their C-produced by alternative splicing. They differ only in their C-terminal regions.

1 Interest processed in all tissues tested, including brain, liver, spleen and heart. In the brain, restricted to epithelial cells of the choroid plexus. Isoform alpha is the more
  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed. Usage by and for commodified and this statement is not removed.
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EMBL; AF031227; AAC15100.1; -.
EMBL; AF279910; AAF91427.1; -.
EMBL; AF279911; AAF91428.1; -.
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                                                                                                                                                                                                                                                                                                                Apoptosis;
                                                                                                                                                                                                                                                                                                                                                     PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY: CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the BC1-2 family.

PTM: Phosphorylated on Ser-13 in response to survival stimuli. Subsequent phosphorylation on Ser-137 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-156, a site within the BH3 domain, leading to the release of BC1-x(L) and the promotion of cell survival. Ser-137 is the major site of AKT/PKB phosphorylation, Ser-156 the major site of protein kinase A (CAPK) phosphorylation (By
                                                                                                                                                                                                                                                                                                                                                     PS01259;
                                                                                                                                                                                                                                                                                                                                                                      IPR000712; Bcl
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205 '
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                     WITH BCL2
SDAGGR ->
                                                                          EVAMEPLRYWTALRILC (IN ISOFORM BETA).
S->A: NO EFFECT ON HETERODIMERIZATION
WITH 14-3-3 PROTEINS.
S->A: NO HETERODIMERIZATION WITH 14-3-3
                                                                                                                                                                                                            SIMILARITY).
PHOSPHORYLATION
                                                           PROTEINS.
                                                                                                                                                                        SIMILARITY)
LPRPKSAGTATOMROSASWTRIIOSWWDRNLGKGGSTPSO
                                                                                                                                                                                                                                                   SIMILARITY).
PHOSPHORYLATION (BY CAPK
                                                                                                                                                                                                                                                                                           PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                               ternative splicing
->A: NO HETERODIMERIZATION WITH 14-3-3 ROTEINS. NO EFFECT ON HETERODIMERIZATION ITH BCL2 NOR WITH PROTEIN P11.
DAGGR -> ERRORK (IN REF. 1).
7AFA71DAE9CF4A81 CRC64;
                                                                                                                                                         EELTYSVEFLPVRAIAMEGWPLLWSFQSFPHTLPPTPP
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Query Match Best Local S Matches 26

l Similarity 26; Conserv

Conservative

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Score 138; DB 1; Pred. No. 8.7e-14; ; Mismatches 0;

Length 205;

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1 NLWAAQRYGRELRRMSDEFEGSFKGL

NLWAAQRYGRELRRMSDEFEGSFKGL

166

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Fesik S.W.;

Fesik S.W.;

*Rationale for Bcl-xL/Bad peptide complex formation from structure, mutagenesis, and biophysical studies.*;

*Protein Sci. 9:2528-2534(2000).

-!- FUNCTION: Promotes cell death. Successfully competes for the binding to Bcl-x(L), Bcl-2 and Bcl-v. thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By similarity). Appears to act as a link between growth factor receptor signaling and the apoptotic pathways.

-!- SUBUNIT: Forms heterodimers with the anti-apoptotic proteins, Bcl-x(L), Bcl-2 and Bcl-w. Also binds protein S100A10 (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1997 (Rel. 35, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
BC12-antagonist of cell death (BAD) (BC1-2 binding component
6) (BC1-XL/BC1-2 associated death promoter).
BAD OR BBC6 OR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAD_HUMAN
Q92934; 014803;
                                                                                                                                                                                                                                                                                             STRUCTURE BY NMR OF 103-127
MEDLINE-21073561; PubMed-11
Petros A.M., Nettesheim D.G
Mack J., Swift K., Matayosh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BAD.
                                                                                                                                                                                                                                                                                                                                                                         Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                Ottille S., Diaz J.-L., Horne W., Chang J., Wa Chang S., Weeks S., Fritz L.C., Oltersdorf T.; "Dimerization properties of human BAD."; J. Biol. Chem. 272:30866-30872(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Bone marrow;
MEDLINE-98049554; F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND DIMERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Takayama S., Reed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          wang H.-G., Rapp U.R., Reed
"Bcl-2 targets +bc ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., MEDLINE-97083574; Pu
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Yin D.X., Li Z., Huang
"A human protein that i
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9606;
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                                           SUBCELLULAR LOCATION: Outer mitochondrial membrane. Upon phosphorylation, locates to the cytoplasm. TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES
DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bcl-2 family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -2 targets the protein kinase Raf-1 to 87:629-638(1996).
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                                                                                                                                                                                                                                                                                             3561; PubMed-11206074;
Nettesheim D.G., Wang Y., Olejniczak E.T.,
ft K., Matayoshi E.D., Zhang H., Thompson C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Human)
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                                BAK, BAD AND
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1 NIWAAQRYGRELRRMSDEFEGSFK

24

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NLWAAQRYGRELRRMSDEFVDSFK 126

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                                                                     SEQUENCE
                                                                                                    CONFLICT
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EMBL; AF021792; AAB72092.1; --
EMBL; AF031523; AAB88124.1; --
EMBL; BC001901; AAH01901.1; --
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SIMILARITY: CONTAINS 1 BCL-3 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 subsequent phosphorylation on Ser-99 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-118, a sitte within the BH3 domain, leading to the release of BCl-\mathbf{x}(\mathbf{L}) and the promotion of cell survival. Ser-99 is the major site of AKT/PKB phosphorylation, Ser-118 the
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RESULT 4
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15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence
01-MAR-2002 (Rel. 41, Last annotatio
Inter-alpha-trypsin inhibitor heavy
chain H2) (HC2).
Nakatani T., Suzuki Y., Yamamoto T., Sinohara H.; Molecular cloning and sequencing of cDNAs encoding three precursors of the inter-alpha-trypsin inhibitor in Syrian implications for the evolution of the inter-alpha-trypsin heavy chain family.";
                                                                                                                                              Eukaryota;
                                                MEDLINE=97420688; PubMed=9276673; Nakatani T., Suzuki Y., Yamamoto
                                                                          TISSUE=Liver;
                                                                                   SEQUENCE FROM N.A.
                                                                                                           NCBI_TaxID=10036;
                                                                                                                         Mesocricetus
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hamster: heavy-chain

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Pfam; PF00092; vwa; 1.
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PROSITE; PS50234; VWFA; 1.
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J. Blochem. 120:145-152(1996).
-i- FUNCTION: MAY ACT AS A CARRIER OF HYALURONAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Glycoprotein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE~97018241; PubMed=8864857
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BIKUNIN. INTER-ALPHA-INHIBITOR (I-ALPHA-I) IS COMPOSED OF H1, H2 AND BIKUNIN, INTER-ALPHA-LIKE INHIBITOR (I-ALPHA-LI) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-I) OF H3 AND BIKUNIN.

PTM: HEAVY CHAINS ARE INTERLINEED WITH BIKUNIN VIA A CHONDROITIN OF THE ALPHA-IN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH ESSENTIAL TO CELLS UNDERGOING BIOLOGICAL PROCESSES (BY SIMILARITY).
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15-JUL-1999 (Rel. 38,
Inter-alpha-trypsin in
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Chan P., Risler J.-L., Raguenez G., Salier J.-P.;
The three heavy-chain precursors for the inter-alpha-inhibitor family in mouse: new members of the multicopper oxidase protein with differential transcription in liver and brain.";
Biochem. J. 306:505-512(1995).
-I- FUNCTION: MAY ACT AS A CARRIER OF HYALURONAN IN SERUM OR AS
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                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: I ALPHA-I PLASMA PROTEASE INHIBITORS ARE ASSEMBLED FROM ONE OR TWO HEAVY CHAINS (HI, H2 OR H3) AND ONE LIGHT CHAIN, BIKUNIN. INTER-ALPHA-INHEBITOR (I-ALPHA-I) IS COMPOSED OF H1, H2 AND BIKUNIN, INTER-ALPHA-LIKE INHIBITOR (I-ALPHA-LI) OF H2 AND BIKUNIN, AND PRE-ALPHA-INHIBITOR (P-ALPHA-1) OF H3 AND BIKUNIN. TISSUE SPECIFICITY: EXPRESSED IN BOTH LIVER AND BRAIN.

TISSUE SPECIFICITY: EXPRESSED IN BOTH LIVER AND BRAIN.

PTM: HEAVY CHAINS ARE INTERLINKED WITH BIKUNIN VIA A CHONDROITIN 4-SULFATE BRIDGE TO THE THEIR C-TERMINAL ASPARTATE (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BINDING PROTEIN BETWEEN HYALURONAN AND OTHER MATRIX PROTEIN, INCLUDING THOSE ON CELL SURFACES IN TISSUES TO REGULATE THE LOCALIZATION, SYNTHESIS AND DEGRADATION OF HYALURONAN WHICH ESSENTIAL TO CELLS UNDERGOING BIOLOGICAL PROCESSES (FY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY: BELONGS TO THE ITIH FAMILY. SIMILARITY: CONTAINS 1 VWFA DOMAIN.
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Similarity
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VWFA; 1.
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468
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445
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                       38.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VWFA.
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Last annotation update)
nhibitor heavy chain H2
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                       Score 53;
Pred. No.
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BY SIMILAL
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VWFA
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                                                                                                                   40DB6716433ED9DC CRC64;
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SEQUENCE FROM N.A.
MEDLINE-92225349; PubMed-1348717;
MEDLINE-92225349; PubMed-1348717;
MEDLINE-92225349; PubMed-1348717;
MEDLINE-92225349; PubMed-1348717;
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P32449;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phospho-2-dehydro-3-deoxyheptonate aldolase, tyrosine-inl (EC 4.1.2.15) (Phospho-2-keto-3-deoxyheptonate aldolase) synthetase) (3-deoxy-7-arabino-heptulosonate 7-phosphate ARO4 OR YBR249C OR YBR1701.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YEAST
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01-FEB-1994 (Rel. 28, Last sequence up
30-MAY-2000 (Rel. 39, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Fungi; Saccharomycetales; NCBI_TaxID=4932;
IR; S38185; Syother is said to said the said that is said; SSP; p00886; 1QR7.
SGD; S0000453; ARO4.
InterPro; IPR001785; DAHP_Synth_1.
Pfam; PF00793; DAHP_Synth_1; 1.
ProDom; PD005060; DAHP_Synth_1; 1.
ProDom; PD005060; DAHP_Synth_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See or send an email to license@isb-sib.ch)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dUTPase in a yeast.";
Yeast 9:1131-1137(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=94078675; PubMed=8256522;
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                                                                                                                                                                                                                                                                                                  EMBL; L20296; AAA65607.1;
EMBL; Z36118; CAA85212.1;
PIR; S38185; S38185.
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PATHMAY: FIRST STEP IN THE BIOSYNTHESIS OF CHORISMATE THE BIOSYNTHESIS OF AROMATIC AMINO ACIDS (THE SHIKIMAT INDUCTION: BY AMINO ACID STARVATION.
SIMILARITY: BELONGS TO CLASS-I DAHP SYNTHETASE FAMILY.
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phosphate + H(2)O.
ENZYME REGULATION: INHIBITED
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the ED
                                                                                                                                                                                                                                                                                                                                                                                                          x61107;
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RA Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,
Ralanoubat M., Lemcke K., Rieger M., Perez-Alonso M., Obermaier B.,
Ra Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P.,
Ra De Simone V., Choisne N., Artiguenave F., Robert C., Brottier P.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Schaefer M., Mueller-Auer S., Gabel C., Fuchs M., Benes V.,
Ra Windelmann R., Kranz H., Voss H., Holland R., Bangert S.,
Ra Wiedelmann R., Kranz H., Voss H., Holland R., Brandt P., Nyakatura G.,
Ra Vezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,
Ra Conrad A., Hornischer K., Kauer G., Loehnert T. H., Nordsiek G.,
Ra Reichelt J., Scharfe M., Schoen O., Bargues M., Terol J., Climent J.,
Ra Navarro P., Collado C., Perez-Perez A., Ottenwaelder B., Duchemin D.,
Gooke R., Laudie M., Berger-Llauro C., Purnelle B., Masuy D.,
Ra Monfort A., Argiriou A., Flores M., Liguori R., Vitale D.,
Marse A.C., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
Ra Mannhaupt G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
Ra Mayer K.F.X., Kaul S., Town C.D., Koo H.L., Tallon L.J., Jenkins J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
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AP3 OR AT3G54340 OR T12E18_30.
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MEDLINE=95036018; PubMed-7948893;
Okamoto H., Yano A., Shiraishi H., Okada K., Shimura Y.;
"Genetic complementation of a floral homeotic mutation, apetala3,
"Genetic complementation of a floral homologous to DEFICIENS of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana (Mouse-ear cress).

Bukaryota; Viridiplantae; Streptophyta; Embryo
Spermatophyta; Magnoliophyta; eudicotyledons;
eurosids II; Brassicales; Brassicaceae; Arabio
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=VARIOUS STRAINS;
MEDLINE=99126449; PubMed=9927474;
MURICHNE=99126449; PudMed=9927474;
MURICHNE=99126449; PudMed=99126449; PudMed=991264449; PudMed=99126449; PudMed=9912
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"The homeotic gene APETALA3 of Arabidopsis thaliana encodes a MADS box, and is expressed in petals and stamens.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=92154682; PubMed=1346756;
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MEDLINE=21016720; PubMed=11130713;
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151:839-848(1999).
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TISSUE SPECIFICITY: EXPRESSED IN PETALS AND STAMENS.
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232 AA;
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199 A
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01-AUG-1991 (Rel. 1
30-MAY-2000 (Rel. 3
Ras-like protein 3.
MEDLINE-91061774; PubMed-1701021;
Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz J Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz J Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz J Casale W.L., McConnell D.G., Wang S.-Y., Lee Y.-J., Linz J Casale W.L., McConnell D.G., WcConnell D.G., WcC
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STRAIN-ATCC 15692 / PAO1;

MEDLINE-20437337; PubMed-10984043;

MEDLINE-20437337; PubMed-10984043;

Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Warrener P.,

Hickey M.J., Brinkman F.S.L., Hufnagle W.O., Kowalik D.J., Lagrou M.

Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman S., Yuan Y.,

Brody L.L., Coulter S.N., Folger K.R., Kas A., Larbig K., Lim R.M.,

Smith K.A., Spencer D.H., Wong G.K.-S., Wu Z., Paulsen I.T.,

Reizer J., Saler M.H., Hancock R.E.W., Lory S., Olson M.V.;

"Complete genome sequence of Pseudomonas Beruginosa PAO1, an

opportunistic pathogen."
                                                                                                                                                                         STRAIN-ATCC
                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                               NCBI_TaxID=4841;
                                                                                                                                                                                                                                                                                              Eukaryota;
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DNA recombination; Coi
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01-MAR-2002 (Rel.
01-MAR-2002 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AE004535; AAG04420.1; -.
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Bacteria; Proteobacteria;
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                                                                                                                                                                                                                                                                                         racemosus (Mucor circinelloides f. lusitanicus).
Fungi; Zygomycota; Zygomycetes; Mucorales; Mucoraceae;
                                                                                                                                                                         1216B;
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41, Last sequence update)
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nrotein rmuC homolog.
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COILED COIL (POTENTIAL).
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55.6%;
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Pred. No. 6.
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RESULT
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GTP-binding; Prenvi**
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                                                                                                                                                                                                                               STRAIN-MSB8 / DSM 3109;

MEDLINE-99287316; PubMed-10360571;

Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

Heidelberg J., Sutton G.G., Fleischmann R.D., Eisen J.A., White O.,

Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

"Evidence for lateral gene transfer between Archaea and Bacteria fro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the Europ
use by
modified
                                                                                                                                                          genome sequence of Thermotoga maritima.";
Nature 399:323-329(1999).
-i- FUNCTION: HYDROLYSIS OF 6-PHOSPHOGLUCONOLACTONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Thermotoga maritima.
Bacteria; Thermotogales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
6-phosphogluconolactonase (EC 3.1.1.31) (6PGL).
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InterPro; IPR001806; Ras_trnsfrmng.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; M55177; AAA83379.1; -. PIR; C36365; C36365.
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phospho-D-gluconate.

PATHWAY: SECOND STEP IN PENTOSE PHOSPHATE PATHWAY.

SIMILARITY: BELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6-PHOSPHATE
ISOMERASE FAMILY. 6-PHOSPHOGLUCONOLACTONASE SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GERMLING AND YEAST.
SIMILARITY: BELONGS TO THE SMALL GTPASE SUPERFAMILY. RAS FAMILY.
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SUBCELLULAR LOCATION: PLASMA MEMBRANE.
DEVELOPMENTAL STAGE: IN SPORULATING MYCELIUM AND MUCH LESS IN
                                                                                                        CATALYTIC ACTIVITY: 6-phospho-D
                                                                                                                                      PHOSPHOGLUCONATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SWISS-PROT entry is copyright. It is produced through a collaboration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REIRRMNKEQEGRSKG 183
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10; Conservative
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Best Local S
Matches 8
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01-MAR-2002 (Rel. 41, C
01-MAR-2002 (Rel. 41, L
01-MAR-2002 (Rel. 41, L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOLTU
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                                       Chloroplast;
TRANSIT
                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                 ++
                                                                                                                                                                                                                                                                                                                                                                                                                              Casazza P., Kaiser S., Willmitzer L., Hoefgen R., I
"Isolation and characterization of a cDNA encoding
from Solanum tuberosum.";
Submitted (AUG-1998) to the EMBL/GenBank/DDBJ data)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Solanum tuberosum (Potato).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Threonine synthase, chloroplast precursor (EC Solanum tubercomm.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000457; Glucosamine
Pfam; PF01182; Glucosamine_iso;
Hydrolase; Complete proteome.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AE001772; AAD36230.1; TIGR; TM1154; -.
                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases. -!- CATALYTIC ACTIVITY: O-phospho-L-homoserine + H(2)O -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            THRC_SOLTU
                                                                                      PROSITE;
                                                                                                        Pfam; PF00291;
                                                                                                                                    EMBL; AF082894; AAF74984.1;
                                                                         Threonine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      111
                                                                                                                     nterPro;
                                                                                                                                                                                                                                                                                      PATHWAY: Threonine biosynthesis; last step.
SUBUNIT: Homodimer (By similarity).
SUBCELLULAR LOCATION: Chloroplast (By similarity).
SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
                                                                                                                                                                                                                                                                                                                     ENZYME REGULATION: Allosterically activated by methionine (SAM) (By similarity).

PAYHWAY: Thropnine biosynthesis; last step.

SUBUNIT: Homodimer 'B' Thropnine biosynthesis; last step.
                                                                                                                                                                                                                                                                                                                                                                              phosphate.
COFACTOR: Pyridoxal phosphate
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8; Conser
                                                    PS00165; DEHYDRATASE_SER_THR; 1. e biosynthesis; Lyase; Pyridoxal ast; Transit peptide.
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                                                                                                                     IPR001926;
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                                                                                                   PALP;
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25325 MW;
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                                                                                                                     B6_enzyme_beta.
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Last annotation updat
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BINDING

196 519 *‡* 

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CHLOROPLAST (BY SIMILARITY).
THREONINE SYNTHASE.
PYRIDOXAL PHOSPHATE (BY SIMILARITY).

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57412 MW;

114C0979CD231464 CRC64;

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OSTRS; 039144;
O1-MAR-2002 (Rel. 41, Created)
O1-MAR-2002 (Rel. 41, Last sequence update)
O1-MAR-2002 (Rel. 41, Last annotation updat
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
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MEDLINE=20083488; PubMed=10617198;
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MEDLINE=99418329; PubMed=10490396;
BartLem D. Tamaki Y., Naito S.;
"Genomic nucleotide sequence of the Arabidopsis threonine synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM
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AT4G29840 OR F27B13.80.
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                           the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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"Characterization of an Arabidopsis thallana cDNA encoding an 
"characterization of an Arabidopsis thallana cDNA encoding an 
"characterization of an Arabidopsis thallana cDNA encoding an 
from higher plants."; 
FEBS Lett. 390:85-90(1996).
                                                                                                                                                                                                                                                                                                               EMBL; AB027151; BAA77707.1; -. EMBL; AL050352; CAB43659.1; -. EMBL; AL161575; CAB79742.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Thomazeau K., Curien G., Dumas R., Biou V.; "Crystal structure of threonine synthase from Arabidopsis thaliana."; Protein Sci. 10:638-648(2001).
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                                                                                                                                                                                 Chloroplast;
TRANSIT
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1 NLWAAQRYGRELRRMSD-----
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PATHWAY: Threonine blosynthesis; last step.
SUBUNIT: Homodimer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBCELLULAR LOCATION: Chloroplast.
SIMILARITY: BELONGS TO THE SERINE/THREONINE DEHYDRATASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            phosphate.
COFACTOR: Pyridoxal phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CATALYTIC ACTIVITY: 0-phospho-L-homoserine + H(2)0 - L-threonine
                                                                                                                                                                                                                               PF00291; PALP; 1.
TE; PS00165; DEHYDRATASE_SER_THR;
                               th 34.8%;
l Similarity 35.3%;
l2; Conservative
                                                                                                                                                                               biosynthesis; Lyase; Pyridoxal phosphate; Allosteric enzyme; st; Transit peptide; 3D-structure.

1 40 CHLOROPLAST.
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tion of Arabidopsis
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                               Score 48; DB Pred. No. 11; 6; Mismatches
                                                                                                                THREONINE SYNTHASE.
PYRIDOXAL PHOSPHATE.
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B27787A57B882AD0 CR
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n M., Joshu C.,
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Till S.,
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172 NLFWAERFGKOFLGMNDLWVKHCGISHTGSFKDL 205

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RESULT 14
FMR2_ANTEL
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Best Local
  FMR2_ANTEL
Q16994;
16-OCT-2001
16-OCT-2001
01-MAR-2002
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SEQUENCE
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or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                    PROSITE; PS01259; BH3; FALSE_NEG.
Apoptosis; Alternative splicing; Membrane
DOMAIN 148 162 BH3.
                                                                                                                                                                                                                                                                                                                   PROSITE;
                                                                                                                                                                                                                                                                                                                                                          EMBL; AF032457; AAC39593.1; EMBL; AF032458; AAC39594.1;
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043521; 043522;

16-0CT-2001 (Rel. 40, Created)

16-0CT-2001 (Rel. 40, Last sequence update)

16-0CT-2001 (Rel. 40, Last annotation update)

BC12-like protein 11 (BC12 interacting mediator of cell death).
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
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SUBUNIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2 PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BFL-1, AND BHRF-1. DOES NOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BOK, BAX OR BAK (BY SIMILARITY).

SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES
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ALTERNATIVE PRODUCTS: 2 ISOFORMS; BimEL (SHOWN HERE) AND BimL; ARE PRODUCED BY ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         y S., Huang D.C.S.;
n: a novel member of the Bcl-2 family that promotes apoptosis,";
J. 17:384-395(1998).
FUNCTION: INDUCES APOPTOSIS. ISOFORM BIML IS MORE POTENT THAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CYTOTOXICITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN: THE BH3 DOMAIN IS REQUIRED FOR BCL-2 BINDING
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(Rel. 41, Last ann
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Last sequence update)
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Pred. No.
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Anthopleura elegantissima (Sea anemone).
Eukaryota; Metazoa; Cnidaria; Anthozoa; Zoantharia; Actiniaria;
Nynantheae; Actiniidae; Anthopleura.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=93054550; PubMed=1429603;
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(Rel. 10, Created)

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16-OCT-1993 (Rel. 27, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Antho-RFamide neuropeptides type 1 precursor.
Anthopleura elegantissima (Sea anemone).
Eukaryota; Metazoa; Cnidaria; Anthozoa; Zoantharia; Actiniaria;
Nynantheae; Actiniidae; Anthopleura.
NCBL_TaxID-6110;
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MEDLINE=93054550; PubMed=1429603;

Schmutzler C., Darmer D., Diekhoff D., Grimmelikhuijzen C.J.P.;

Schmutzler C. Darmer D., Diekhoff D., Grimmelikhuijzen C.J.P.;

"Identification of a novel type of processing sites in the precursor for the sea anemone neuropeptide Antho-RFamide (<Glu-Gly-Arg-Phe-NH2) from Anthopleura elegantissima.";

J. Biol. Chem. 267:22534-22541(1992).
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RC STRAIN-H37RV:

RX MEDLINE-9829597; PubMed-9634230;

RC Cole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris D.,

RA Cole S.T., Brosch R., Barry C.E. III, Tekala F.,

RA Cole S.T., Brosch R., Brown D., Chillingworth T., Connor R.,

RA Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd S.,

RA Davies R., Devlin K., Feltwell T., Gentles S., Murphy L.,

RA Diver S., Osborne J., Ouail M.A., Rajandream M.A., Rogers J.,

RA Oliver S., Seeger K., Skalton S., Squares S., Squares R.,

RA Rutter S., Seeger K., Skalton S., Squares S., Squares R.,

RA Rutter S., Seeger K., Whitehead S., Barrell B.G.;

"Deciphering the blology of Mycobacterium tuberculosis from the

complete genome sequence.";

RA Ruture 393:337-544(1988).

"C EMBL: 274025; CAA98415.1: -.

RE EMBL: 274025; CAA98415.1: -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

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RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.

RA Tuberculist; RA72014; -.
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Best Local S
Matches 10
genes.";
MO1. 16:1037-1045(1999).
EMBL; AF143380; AAF25590.1; -.
HSSP; P11746; 1MAM.
InterPro; IPR002487; K-box.
InterPro; IPR002100; MADS-box.
InterPro; IPR002100; MADS-box.
Pfam; PF00486; K-box; 1.
Pfam; PF00319; SFF-TF; 1.
PRINTS; PR00404; MADSDOMAIN.
SMART; SM00432; MADS; 1.
PROSITE; PS50066; MADS_BOX_2; 1.
PROSITE; PS50066; MADS_BOX_2; 1.
SMOM_TER

231 AA; 27176 MW; A67CAE1.
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09SEGO; O1-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
APETALA3 (FRAGMENT).
Arabidopsis lyrata.
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=59689;
[1]
SEQUENCE FROM N.A.
MEDLINE=99404148; PubMed=10474900;
Lawton-Rauh A.L. Buckler E.S. IV, Puri
"Patterns of molecular evolution among
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01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
HYPOPHETICAL 24.1 KDA PROTEIN CY39.03C.
RV2014 OR MTCY39.03C.
MYCODBACTETIUM tuberculosis.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriacese; Mycobacterium.
NCBI_TaxID=1773;
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Pred. No. 5.4
1; Mismatches
                      A67CAE1EEBD8F7AA
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Best Local S
Matches 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEQUENCE FROM N.A.

(C STRAIN=CV: GR-3, AND CV: CHI-1;

(C STRAIN=CV: GR-3, AND CV: CHI-1;

(C STRAIN=CV: GR-3, AND CV: CHI-1;

(C Puringman M.D., Suddith J.I.;

A Puringman M.D., Suddith J.I.;

A Puringman M.D., Suddith J.I.;

A Puringman M.D., Suddith J.I.;

"Molecular population genetics of floral homeotic loci. Departs

"from the equilibrium-neutral model at the APETALA3 and PISTILLI

(T genes of Arabidopsis thaliana.";

(Genetics 15:1839-848(1999).

(C '-- SUBCELULAR LOCATION: NUCLEAR (BY SIMILARITY).

(C '-- SUBCELULAR LOCATION: NADSAIN FAMILY OF TRANSCRIPTION FACTOR EMBL; AF115799; AAD51887.1; -.

(R EMBL; AF115799; AAD5187.1; -.

(R EMBL; AF115799; AAD5187.1; -.

(R EMBL; AF115799; AAD5187.1; -.)

(R EMBL; AF115799; AAD51879.1; -.)

(R EMBL; AF115799; AAD5187
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Best Local S
Matches 12
Q9SQ22

Q9SQ22;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
FLORAL HOMEOTIC PROTEIN Ap3.
APETALA3.
APETALA3.
APETALA3.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae: Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots: Rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBI_TaxID=3702;
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09S703:
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 17, Last sequence update)
01-UN-2001 (TrEMBLrel. 17, Last annotation update)
PLORAL HOMEOTIC PROTEIN AP3.
APETALA3.
Arabidopsis thaliana (Mouse-ear cress).
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnollophyta; endicotyledons; core eudicots; Rosid;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE: PS00350; MADS_BOX_1; 1.
PROSITE: PS50066; MADS_BOX_2; 1.
DNA-binding; Nuclear protein: Transcription regulation.
SEQUENCE 232 AA; 27340 MW; 6690703F9F9CED63 CRC64;
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l similarity 44.4%;
l2; Conservative
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Pred. No. 11;
3; Mismatches
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RP SEQUENCE FROM N.A.

RC STRAIN-CV. KENT;

RX MEDILINE-99126449; PubMed-9927474;

RR PUTUGGARAN M.D. SUDDIGHT J.I.;

RN PUTUGGARAN M.D. SUDDIGHT SO of floral homeotic loci. Departures with the content population genetics of floral homeotic loci. Departures from the egulilibrium-neutral model at the APETALA3 and PISTILLATA regences of Arabidopsis thaliana.";

RI Genetics 151:893-848(1993).

CC -!- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).

CC -!- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).

CC -!- SIMILARITY: TO THE MADS DOMAIN FAMILY OF TRANSCRIPTION FACTORS.

CC EMBL: AF115805; AD51894.1; --

CR PAIL FORD SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).

CR INTERPOO. IRRO02487; K-box.

DR FINTSPPO1198002487; K-box.

DR INTERPOO. IRRO02408; K-box.

DR FIAM; PF01346; K-box; 1.

PG Pfam; PF01480; K-box; 1.

PG Pfam; PF01480; K-box; 1.

DR PGSITE: PS00065; MADS_BOX_1; 1.

DR PROSITE: PS00050; MADS_BOX_2; 1.

DR PROSITE: PS00050; MADS_BOX_1; 1.

PROSITE: PS00065; MADS_BOX_1; 1.
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B SEQUENCE FROM N.A.

C STRAIN-CV. LI-8;

C STRAIN-CV. LI-8;

MEDLINE-99126449; PubMed-9927474;

N Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Purugganan M.D., Suddith J.I.;

M Perms the equilibrium neutral model at the APETALA3 and PISTILLJ

M Penes of ArabiOposis thalians.",

M Genetics 151:839-848(1999).

M Genetics 151:839-848(199).

M Ge
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O9SO21;
O1-MAY-2000 (TrEMBLrel. 13, Created)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PLORAL HOMEOTIC PROTEIN AP3.
APETALA3.
APETALA
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NCBI_TaxID=3702;
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Best Local
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OSSO19, OSSO19,
O1-MAY-2000 (TrEMBLIFE: 13, C
O1-MAY-2000 (TrEMBLIFE: 17, L
O1-JUN-2001 (TrEMBLIFE: 17, L
FLORAL HOMEOTIC PROTEIN AP3.
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QSCO20
QSCO20;
QTEMBLIE1, 1
Q1-MAY-2000 (TIEMBLIE1, 1
Q1-MAY-2000 (TIEMBLIE1, 1
Q1-DEC-2001 (TIEMBLIE1, 1
PLORAL HOMBOTIC PROTEIN A
                                                       APETALA3.
Arabidopsis thaliana (Mouse-ear cress).
Brabaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; endicotyledons; core endicots; Rosid
eurosids II, Brassicales; Brassicaceae; Arabidopsis.
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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  SEQUENCE FROM N.A.
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Pred. No. 11;
3; Mismatches
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Last sequence update)
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Last sequence up
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WEDLINE-9916449; PubMed-9927474;

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AMEDLINE-9916449; PubMed-9927474;

The "Molecular population genetics of floral homeotic loci. Departures for modelecular population genetics of floral homeotic loci. Departures for modelecular population genetics of floral homeotic loci. Departures for modelecular population genetics of floral homeotic loci. Departures for modelecular model at the APETALA3 and PISTILLATA for genetics 15:1839-848(1999).

BR Genetics 15:1839-848(1999).

DR EMBL; AF115808; AAD51897.1; -.

DR HISSP; P11746; IMMN.

DR INCEPTO: IPR002187; K-box.

DR INCEPTO: IPR002100; MADS-box.

DR Ffam; PF00319; SRF-TF; 1

DR Pfam; PF00319; SRF-TF; 1

DR Pfam; PF00319; SRF-TF; 1

DR PFAM; SM00432; MADS; 1.

DR PROSITE; PS30066; MADS-BOX_2; 1.

DR PROSITE; PS30066; MADS-BOX_2; 1.

DR PROSITE; PS30066; MADS-BOX_2; 1.
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Puruganan M.D., Suddith J.I.,

RY
Molecular population genetics of floral homeotic loci. Departures

RY
from the equilibrium-neutral model at the APETALA3 and PISTILLATA

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genes of Arabidopsis thaliana.";

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Genetics 151:839-848(1999).

DR
HSSP: RAIIS807: AAD51956.1; -.

DR
HSSP: P11746: 1MMM

DR
InterPro; IPR002487; K-box.

DR
InterPro; IPR002100; MAD5-box.

DR
InterPro; IPR002100; MAD5-box.

DR
Pfam; PF00319; SRP-Tp; 1.

DR
Pfam; PF00319; SRP-Tp; 1.

DR
PROSITE; PS00404; MADSDOMAIN.

DR
PRINTS; PR00404; MADSDOMAIN.

DR
PROSITE; PS00406; MADS; 1.

DR
PROSITE; PS0066; MADS; 2.

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SPOURNCE 232 AA; 27311 MW; 71AE593FB8A67EC3 CRC64;
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Best Local S
Matches 12
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Best Local Similarity 44.0
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QSQ18;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-UN-2001 (TrEMBLrel. 17, Last annotation update)
FLORAL HOMEOTIC PROTEIN AP3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APETALA3.
Arabidopsis thallana (Mouse-ear cress).
Bukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Ebukaryota; Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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MEDLINE-99126449; Pu
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Q9SQ16;
Q1-MAY-2000 (TremBlrel 13, C
Q1-MAY-2000 (TremBlrel 13, L
Q1-DEC-2001 (TremBlrel 19, L
FLORAL HOMEOTIC PROTEIN AP3.
STRAIN=CV. LISSE;
MEDLINE=99126449; PubMed=9927474;
PURUGGARAN M.D., Suddith J.I.;
PURUGGARAN M.D., Suddith J.I.;
Molecular population genetics of floral homeotic loci. Departures
"Molecular population neutral model at the APETALA3 and PISTILLATA
genes of Arabidopsis thaliana.";
-1- SUBCELLULAR LOCATION: NUCLEAR (BY SIMILARITY).
-1- SIMILARITY: TO THE MADS DOMAIN FAMILY OF TRANSCRIPTION FACTORS
EMBL; AF115810; AAD51899.1; -.
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InterPro; IPR00240; K-box.
InterPro; IPR002100; MADS-box.
Pfam; PP01486; K-box; 1.
Pfam; PP01486; K-box; 1.
PRINTS; PR00404; MADSDOMAIN.
SMART; SN00404; MADSDOMAIN.
SMART; SN00432; MADS; 1.
PROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS00350; MADS_BOX_2; 1.
DNA-binding; Nuclear protein; Transcription regulation.
DNA-binding; Nuclear protein; Transcription regulation.
DNA-binding; Nuclear protein; Transcription regulation.
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Eukaryota; Viridiplantae: Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Maponliophyta; eudicotyledoms; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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|| | :|||: || |: ||
107 QRLGECLDELDIQELRRLEDEMENTEK 133
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RESULT 13
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Q9SQ15;
Q1-MAY-2000 (TrEMBLrel 13, Created)
Q1-MAY-2000 (TrEMBLrel 13, Last sequence update)
Q1-DEC-2001 (TrEMBLrel 19, Last annotation update)
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InterPro; IPR002100; MADS-box.
InterPro; IPR002100; MADS-box.
InterPro; IPR002100; MADS-box.
Iffam, PF001319; SRP-TF; 1.
Pfam, PF001319; SRP-TF; 1.
SMART; SM00432; MADS; 1.
SMART; SM00432; MADS; 1.
IRROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS00350; MADS_BOX_1; 1.
PROSITE; PS50056; MADS_BOX_2; 1.
DNA-binding; Nuclear protein; Transcription regulation.
DNA-binding; Nuclear protein; Transcription regulation.
DNA-binding; Nuclear protein; Transcription regulation.
                                                                                                                                                                                                                                                                                                                                         Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core exeurosids II; Brassicales; Brassicaceae; Arabidopsis.
Q9KGW3
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                                           QRVGECLDELDIQELRRLEDEMENTFK 133
                                                      QRYG------RELRRMSDEFEGSFK 24
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il Similarity 44.4%;
12; Conservative
                                                                             l Similarity 44.
PRELIMINARY;
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                                                                            score 51; DB pred. No. 11; 3; Mismatches
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Pred. No.
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3; Mismatches
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11;
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RESULT
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037056; 01-JAN-1998 (TrEMBLrel. 05, Created)
01-DAN-1998 (TrEMBLrel. 05, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
ENVELOPE GLYCOPROTESIN (FRACMENT).
Chimpanzee immunodeficiency virus (SIV(cpz)) (CIV).
Viruses; Retroid viruses; Retroviridae; Lentivirus.
NCBI_TaxID-11723;
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STRALIA-WCS365;
Camacho Carvajal M.M., Lugtenberg B.J.J., Bloemberg G.V.;
Camacho Carvajal M.M., Lugtenberg B.J.J., Bloemberg G.V.;
Camacho Carvajal M.M., Lugtenberg B.J.J., Bloemberg G.V.;
Characterization of NADH dehydrogenases of pseudomonas fluorescens
WCS365 and their role in competitive root colonisation.";
Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AFJ81148; AAF97803.1;
EMBL, AFJ81148; AAF97803.1;
InterPro, IRR000783; COMPLEXI_75K.
PROSITE: PS00641; COMPLEXI_75K.1; 1.
PROSITE: PS00642; COMPLEXI_75K.2; 1.
PROSITE: PS00643; COMPLEXI_75K.3; 1.
SEQUENCE 904 AA; 98157 MW; C25E86C5D4DFA457 CRC64;
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01-CCT-2000 (TrEMBLrel. 15, Created)
01-CCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
NADH DEHYDROGENASE I SUBUNIT G.
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EMBL: AF015909. AAC59621.1;
Interpro; IPR000777; GP120.
Pfam; PF00516; GP120; 1.
AIDS; Coat protein; Glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-SIVAGMIPR1185;
MEDLINE-98343740; PubMed-9680146;
WEDLINE-98343740; Edgelbrecht S., Mwenda
van Rensburg E.J., Engelbrecht S., Mwenda
Stander T., Chege G.K.;
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Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
Pseudomonas.
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                                 AQRYGRELRRMSDEFEGSFKG
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9; Conservative
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283 AA;
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32477
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Pred. No. 63;
4; Mismatches
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                  Human BAD BH3 doma
Bcl2 polypeptide B
Bcl2 BAD BH3 consensus
BBC6 protein for r
Human Bad BC1-XL/Bc1-2
Human BAD mutant a
Human BAD mutant a
Human BAD grotein.
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Novel human diagno	Murine Bim-L mutan	Murine Bim-L mutan	Murine Bim-L mutan	Murine Bim-L mutan		Bcl-	Bc1-2	opsis t	BH3 domain of huma	Human BAD BH3 doma	bcl-x(L)/bcl-2 ass	Bad-DTTR apoptosis	Longer murine BAD	Murine BAD protein	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-	Murine BCL-XL/BCL-	bcl-x(L)/bcl-2 ass	Shorter murine BAD	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-	Mutant BCL-XL/BCL-	nt BC	polypeptide	polypeptide	Bcl2 polypeptide B	polypeptide	polypeptide	×	Bcl2 polypeptide B	Mouse BAD BH3 doma	BAD BH3 domain reg

## ALIGNMENTS

RESULT

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WFI; 1999-20008/21. Bcl homology domain 3 polypeptide		(UNIW ) UNIV WASHINGTON.	07-OCT-1997; 9705-0946039. 26-SEP-1997; 970S-0060133.			WC9916/8/-A1.		Homo sapiens.	arthritis; autoimmune disease; therapy.	<pre>apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition;</pre>	BH3 domain; cell death agonist; bcl homology domain; BCL-2 family;	Human BAD BH3 Gomain.		02-JUL-1999 (first entry)	MAI USAZI;		AAY05421 standard; peptide; 16 AA.	AAY05421

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Best Loc
Matches
The invention relates to a peptide conjugate having the formula:

(R-X)n-peptide where n = 1-10; X = C=O, when the R-X group is attached to the N-terminus of the peptide, or a side chain of the peptide where the functional group of the side chain is NH2 or OH; OT X = O OR NH, when the R-X group is attached to the C-terminus of the peptide, or a side chain of the peptide, where the side chain functional group is COOH or COOH3; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one or two double bonds, cyclobutyl, cyclopeartyl, cyclobexyl oppionally monosubstituted with a 1-5C straight or branched chain alkyl group,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This sequence represents the BH3 domain of human BAD. The invention relates to a bel homology domain 3 (BH3 domain), derived from a proapoptotic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
                                                                                                                                                                                                                                                                                                                                    New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local S
Matches 16
                                                                                                                                               The present sequence is the mammalian Bad Bc1-2 homology domain 3 (BH3) domain, which was used in a sequence alignment with the same domain of a putative version of the mammalian apoptosis regulator BBC3 which was designated BBC3-ORF2. The BBC3 protein,
                                                                                                                                                                                                                                                                                                                                                              Novel polynucleotide encoding a BBC3 protein which modulating apoptosis, especially in the treatment cautoimmune diseases {\ \ }
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zhu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mammal; apoptosis; ce apoptosis inhibition;
                                                            nucleic acids and antibodies are death or for preventing apoptosis autoimmune diseases.
                                                                                                                                                                                                                                                                                                     Disclosure; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   02-NOV-1998;
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                                                                                                                                                                                                                                                                                                     4; 47pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chittenden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell death; BBC3;
on; malignant cell;
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                                                                                          apoptosis
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Pred. No.
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                                                                                          suitable for use in s in malignant cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  apoptosis promotion; autoimmune disease.
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.3e-08;
s 0;
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                                                                                                                                                                                                                                                                                                                                                                                               of cancer a
                                                                                             promoting cell
and those causing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
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Sequence

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Matches Query Match Best Local

1 Similarity 16; Conser

100.0%; llarity 100.0%; Conservative 0

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Score 83; DB 21; Pred. No. 1.6e-07; ; Mismatches 0;

Length 26; Indels

0; Gaps

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The present invention describes an isolated or synthetic polypeptide (C (1) comprising a less than full length amino acid sequence of a mutant C Bel-XL/Bel-2 associated cell death regulator polypeptide (BAD) or its C fragment, which contains amino acid substitutions at Seril3 of a human C BAD, SeriS5 of a murine BAD (Longer murine BAD) or Seril3 of a murine BAD (Longer murine BAD) or Seril3 of a murine BAD (Longer murine BAD) or Seril3 of a murine BAD (Longer murine BAD) or Seril3 of a murine BAD (Longer murine BAD) or Seril3 of a murine C G DAD (Shorter murine BAD) or Seril3 of a murine C G DAD (Shorter murine BAD) or Seril3 of a murine C G DAD (Shorter Marine G DAD) or Seril3 of a murine C G DAD (Shorter Marine G DAD) or Seril3 of a murine C G DAD (Shorter Marine G DAD) or Seril3 of a murine G DAD (Shorter G DAD) or Seril3 of a murine G DAD (Shorter G DAD) or Seril3 of a murine G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD (Shorter G DAD) or Seril3 of G DAD (Shorter G DAD (Shorter G DAD (Shorter G DAD) or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Seril3 or Ser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Serl18, Ser155 or Serl13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Zhou
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bcl-XI/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiviral; antional healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; appertusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BAD BH3 consensus peptide sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (APOP-) APOPTOSIS TECHNOLOGY INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 2; Fig 3a; 157pp; English
                                                          present invention
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17-JUL-1998

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RESULT
AAW32476
RESULT
AAW55779
ID AAW5
XX
AC AAW5
XX
DT 17-J
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Matches 16
                                                                                                                   Query Match
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Matches 16
                                                                                                                                                                             The present sequence represents a protein of 166 amino acids. The sequence is disclosed as being a protein called BBC6 which regulates cell death through interaction with Bcl-2. The DNA may be used for the production of the recombinant protein, which can be used in unspecified therapeutic or diagnostic procedures, as a molecular weight marker, and to raise antibodies that can be used in unspecified diagnostic or therapeutic applications and to reduce or eliminate the biological activity of the BBC6 protein in vivo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BBC6 protein for regulating cell death.
                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                 Claim 1; Column 11-12; 7pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BBC6 gene; cell
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW32476
                                   AAW55779
                                                                                                                                                                                                                                                                                 Isolated BBC6 gene - encodes a protein through interaction with Bcl-2
                                                                                                                                                                                                                                                                                                                                                                                             18-JUN-1996;
                                                                                                                                                                                                                                                                                                                                                         (CLON-) CLONTECH LAB INC
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DB; AAT91561.
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                                                                                                                             Similarity
                                    standard;
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Conservative
                                                                                                                                                               166
                                                                                                                   Conservative
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                                                                                                                                                                                                                                                                                                                                                                                             96US-0665617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    death; cell cycle; Bcl2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein;
                                    Protein;
                                                                                                                            100.0%;
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Pred. No.
                                                                                                                            Score 83;
Pred. No. 1
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                                                                                                                    Mismatches
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                                                                                                                   DB 18;
1.2e-06;
hes 0;
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                                                                                                                                    Length 166;
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RESULT AABI3512
ID AABI3512
ID AABI
XX AABI
AC AABI
XX O2-N
XX Huma
KW Huma
KW trau
OS Homc
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Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is the human Bcl-xL/Bcl-2 associated death promoting polypeptide, Bad, the binding of which to Bcl-xl clearly provided to the binding of which to Bcl-xl clearly prevent diseases characterised by apoptotic call death, i.e. apoptosis. Bad can be used in screening assays for compounds to treat or prevent diseases characterised by apoptotic call death, such as neurodegenerative disorders, e.g. Alzheimer's and Parkinson's disease, amyotrophic lateral sclerosis, retrinitis pigmentosa and cerebellar degeneration, and myelodysplastic syndromes, e.g. aplastic anaemia and ischemic injury including myocardial infarction, stroke and reperfusion injury. Assays can also be used to obtain apoptosis enhancing compounds to treat or prevent diseases characterised by the loss of apoptotic call death, such as cancers, e.g. systemic lupus erythematosus and immone-mediated glomerulonephritis and viral infections, e.g. herpeavirus, autoiamune diseases, e.g. systemic lupus erythematosus and immone-mediated plomerulonephritis and viral infections, e.g. herpeavirus, autoiamune paxilrus or adenovirus infection. Bad can also be used for
                                                                                                                                                Human cell proliferation protein APOP-1.
                                                                                                                                                                                                        02-NOV-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 8; Fig 1; 41pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bad gene mediating apoptosis - used to develop products for treating e.g. neurodegenerative disease, cancers or autoimmune disease
                          Homo sapiens
                                                                   Human; cell proliferation; APOP-1; cancer; inflammation; infection; trauma; neurodegenerative disease; ischaemic injury; wasting disease.
                                                                                                                                                                                                                                                           AAB13512;
                                                                                                                                                                                                                                                                                                          AAB13512 standard;
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programmed cell death; apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                         108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   detection and diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (IDUN-) IDUN PHARM INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 ORYGRELRRMSDEFVD 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 100.0%;
l Similarity 100.0%;
l6; Conservative 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      168 AA;
                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96US-0717123.
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                                                                                                                                                                                                                                                                                                          protein; 168 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 83; DE
Pred. No. 1.2
D; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DB 19;
1.2e-06;
hes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 168;
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The present sequence is the human APOP-1 protein. This protein, which consider structural and chemical homology with Bcl-2, is involved in cell proliferation. Its coding sequence was isolated by screening a synovial citisuse cDNA library using a computer search for anion acid sequence alignments. The gene and protein can be used in the treatment of various cancers, disorders with associated inflammation such as Addison's concers, adult respiratory distress syndrome, altergies, anaemia, asthma, atheroscierosis, Crohn's disease, ulcerative colitis, diabetes mellitus, complysema, glomerulonephritis, gouth, Graves' disease, irritable bowel syndrome, lupus erythematosus, multiple sclerosis, myasthenia gravis, composition, pericardial inflammation, osteoporosis, rheumatoid arthritis, Sjogren's syndrome and autoimmune thyroiditis, complications of cancer, haemodialysis and extracorporeal circulation, infections, infectious and generic immunodeficiencies, neurodegenerative diseases such as Alzheimer's disease and Parkinson's disease, ischaemic injuries such as myocardial infarction, and wasting diseases including cachexia.
                                                                                                                                                                                                                                                                                                                                                                                                                                         Novel polynucleotide and polypeptide sequences of proteins associated with cell proliferation for diagnosis, prevention and treatment of except cancer, acquired immunodeficiency syndrome, and Parkinson's disease -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Carley NC,
Sequence
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DB; AAA63332.
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168 AA;
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RESULT
AAB70368
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Best Local
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Pred. No. 1.2e-06;
; Mismatches 0;
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Bcl-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.

Human BAD mutant amino acid sequence SEQ ID NO:1.

WO200110888-A1 Homo sapiens Synthetic. δõ

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RESULT
AAB4427
ID AAB4
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XX O2-A
DE Huma
XX S-ph
KW S-ph
KW CUL-
KW Bad;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention describes an isolated or synthetic polypeptide (I) comprising a less than full length amino acid sequence of a mutant CC later than the comprising a less than full length amino acid sequence of a mutant CC later than the contains amino acid substitutions at Serl18 of a mutant CC later than the contains amino acid substitutions at Serl18 of a mutant CC later mutine BAD (I) as immunostimulant, neuroprotective, CC later thirtic, antiinflammatory and immunosuppressive activities, and cc can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC polynucleotides can be used for screening candidate compounds and drugs cf for activity that promote cell survival or apoptosis. Other uses include inducing or inhibiting apoptosis in a cell. Candidate compounds continued in the continued continued in the continued cell death, reperfusion cell death, wound healing, cancer, viral infections, although the continued callosses. The present sequence represents a specifically callosmane diseases. The present sequence from the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 16; Conservative 0
                                                                                                                                                                                                                                                                                S-phase kinase associated protein; SKP1; SKP2; SKP2-like protein; PF. CUL-1; cullin; CD53; P27; cyclin E; Max; Mad; C-MyC; MDM2; P53; Bax; Bad; Bc1-2; tumour; Cytostatic.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 1; Page 147; 157pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            apoptosis,
Ser113 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypepthde, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Serl18, Serl55 or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-138734/14.
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                               05-JUN-2000; 2000WO-US15449
                                                                                                                                                    WO200075184-A1
                                                                                                                                                                                                                                                                                                                                                                                                                Human Bad protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAB48287;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein; 168
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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1.2e-06;
thes 0;
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Best Local S
Matches 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Modulating polypeptide levels in a cell, diagnosing and treating tumor, involves altering levels of proteins such as S-phase kinase associated proteins 1, 2 and cullin/CDC53 proteins -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 04-JUN-1999;
                                                                                                                                                                                                                                                                                                                Human; cell proliferation; APOP-1; APOP-2; APOP-3; apoptosis; brain cancer; breast cancer; Alzheimer's disease; Parkinson's inflammation; allergy; gout; osteoarthritis; bronchitis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAG67688 standard; Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             treating tumours.
                                                                     Modified-site
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)B; AAC84599.
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115..1
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34..36
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16..19
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153..1
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                                                                                                                          /note-
                                                                                                                                                    "potential casein kinase II phosphorylation site"
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                                                                                                          "potential cAMP- and cGMP-dependent protein kinase phosphorylation site"
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Pred. No. 1.2e-06;
Mismatches 0;
                                                                                 protein kinase C phosphorylation site"
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disease;
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Best Local S
Matches 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence represents a human protein which is associated with cell proliferation, designated APOP-1. The specification also describes APOP-2 and APOP-3. The APOP polypeptides are useful for diagnosing, preventing or treating disorders associated with abnormal cell proliferation and apoptosis. The polypeptides and composition are particularly useful for treating or preventing cancer (e.g. brain or breast cancer), a disorder associated with an increase in apoptosis (e.g. Alzheimer's disease or Parkinson's disease) or inflammation (e.g. allergies, gout, osteoarthritis or bronchitis).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New polypeptides associated with cell proliferation, useful for preventing or treating cancer (e.g. brain cancer), a disorder associated with an increase in apoptosis (e.g. Alzheimer's disease) inflammation (e.g. gout)
                                                                      28-MAY-1999;
                                                                                                                                                       WO200110888-A1
                                                                                                                                                                                 OWOH
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)B; AAH78430.
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ches 0;
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The present invention describes an isolated or synthetic polypeptide (I) comprising a less than full length amino acid sequence of a mutant Bel-XL/Bel-2 associated cell death regulator polypeptide (BAD) or its gragment, which contains amino acid substitutions at Seril8 of a murine BAD, (I) has immunostimulant, neuroprotective, antischaemic, vulnerary, cytostatic, antiviral, and contropic, antischaemic, vulnerary, cytostatic, antiviral, and can be used as an apoptosis inducer or inhibitor. BAD polypeptides and grague can be used for screening candidate compounds and drugs for activity that promote cell survival or apoptosis. Other uses include inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds inducing or inhibiting apoptosis in a cell. Candidate compounds constituted and (mutant) BAD polypeptides are useful in treating inmunodeficiency diseases, meurodegenerative diseases, isochaemic cell death, reperfusion cell death, wound healing, cancer, viral infections, clambing cancer, viral infections, arthritis, infertility, inflammation and cautoimmune diseases. The present sequence represents a BAD BHJ domain or invention.
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Serll3 -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Example 9; Page 92; 157pp; English.
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Query Match Best Local s Matches 15 12 ٢ ۳ qrygrelrrmsdesvd 16 QRYGRELRRMSDEFVD 16 15; Similarity Conservative 90.48; Score 75; DB 22; Pred. No. 2.6e-06; Mismatches Length 0; Gaps

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Sequence

18

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02-MAY-2001 (first entry) AAB70380; AAB70380 standard; Peptide; BH3 domain region related phosphopeptide SEQ ID NO:18. 20 ξ

Bol-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiirtal; antiarthritic; antiinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease. 28-MAY-1999; 30-MAY-2000; W0200110888-A1 15-FEB-2001 APOPTOSIS TECHNOLOGY 2000WO-US11864 99US-0136783

WPI;

2001-138734/14.

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Serll3 -
                                                                                                                                        07-OCT-1997;
26-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                              BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition; arthritis; autoimmune disease; therapy.
                                                                                                  (UNIW ) UNIV WASHINGTON
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2.9e-06;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This sequence represents the BH3 domain of mouse BAD. The invention relates to a bcl homology domain 3 (BH3 domain), the invention relates to a bcl homology domain 3 (BH3 domain), derived from a proapoptotic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
The invention relates to a peptide conjugate having the formula: (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached to the N-terminus of the peptide, or a side chain of the peptide where the functional group of the side chain is NH2 or OH; or X = O or OH; when the R-X group is attached to the C-terminus of the peptide, or a side chain of the peptide, where the side chain functional group is CO or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one
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                                                                                                                                                                                                                                                                                         New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
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                                                                                                                                                                                                                                      Claim 18;
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                                                                                                                                                                                                                                      Page 18; 74pp;
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CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain CC alkyl group, or benzyl The peptides AAB37001-B37058 represent examples CC of the peptide portion of the conjugate. The peptides represent analogues CC of the peptide portion of the conjugate. The peptides represent analogues CC the BH3 domain of the cell death agonist Bad. The peptide conjugate is useful for modulating apoptosis in the cells of a subject, or for CC reversing B cell lymphoma/leukemia 2 (Bcl-2)-mediated blockage of CC spoptosis in cancer cells. It is also useful for inhibiting Bcl-2 CC function. In particular, the peptide conjugate is useful for treating a CC subject afflicted with a cancer characterized by cancer cells that CC express Bcl-2. The cancer includes prostate, colorectal, gastric, CC non-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or CC scote also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is also useful for treating disorders characterized by immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
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Matches 14
The sequences given in AAR95155-67 represent epitopes derived from the murine bcl-x(L)/bcl-2 associated death promoter (Bad) polypeptide (see also AAR95168). Bad is a 22.1 kD protein which interacts with bcl-2 and bcl-x proteins and regulates cell death. It has homology to the bcl-2-related family clustered in the BHI and BH2 domain. Bad has been found
                                                                                                                                                                                                                                              Polynucleotide encoding bci-x(L)/bcl-2 associated death promoter useful to treat neoplasia and apoptosis and to identify agents inhibiting its binding to bcl-2 or bcl-x(L) to form heteromultimers
                                                                                                                                                                                                                                                                                                                                                                             WPI;
                                                                                                                                                                                           Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Epitope; murine; bcl-x(L)/bcl-2 associated death promoter; Bad; stroke; polypeptide; bcl-x; cell death; regulate; BH1; BH2; apoptotic cell deat cytokine deprivation; IL-3 dependent cell line; immunodeficiency; AIDS; neurodegenerative disease; senescence; ischaemia; neoplasia.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Korsmeyer
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Query Match
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                                                                                                                                                             to hybridise to bcl-x(L) and bcl-2 in yeast two-hybrid assays and in vivo in mammalian cells. Overexpressed Bad counters the death inhibitory activity of bcl-x(L), but is much less effective at countering the death inhibitory activity of bcl-2. Bad expression can accelerate apoptotic cell death induced by cytokine deprivation in an IL-3 dependent cell line expression bcl-x(L), and its also counters the death repressor activity of bcl-x(L). Bad competes with Bax for binding to bcl-x(L). Bad may be used to identify agents which inhibit its binding to bcl-x(L) or bcl-x(L) to form heterodimers. Such agents may be used to treat conscious such agents may be used to treat the diseases, immunodeficiency diseases, e.g. AIDS.
                                                                                             Sequence
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US-08-661-479-10
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Sequence 1, Appli
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3, Appli
26, Appl
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34, Appl
69, Appl
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2, Appl
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2, Appli
1, Appli
12, Appl
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                                                                                                                                          Query Match
Best Local 9
                                                                                                                        Matches
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Result

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Minimum Maximum

DB DB

Database

Searched:

Sequence:

Title:

38 45.8 43.2 4 US-09-472-971-1 38 45.8 575 3 US-08-913-805A-10 38 45.8 575 3 US-08-913-805A-10 38 45.8 575 4 US-09-442-629-2 38 45.8 575 4 US-09-442-629-10 36 43.4 173 3 US-08-669-408B-8 36 43.4 173 3 US-08-669-408B-8 36 43.4 1093 5 PCT-US93-03077-1 35 42.2 108 2 US-08-857-076-110 35 42.2 108 2 US-08-857-076-12 34 41.0 66 2 US-08-857-078-42 34 41.0 168 4 US-09-199-637A-425 34 41.0 339 3 US-08-964-614A-1 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 339 3 US-08-964-614A-2 34 41.0 355 4 US-09-194-905-10 34 41.0 355 4 US-09-194-905-10
.88 575 3 3 .88 575 4 4 1173 3 3 4 11093 5 5 1 1 6 6 6 2 2 1 6 6 6 2 2 3 3 9 3 9 3 3 3 9 3 3 3 9 3 3 3 9 3
# W W 4 4 W W W W 4 H
3 US-08-913-805A-10 4 US-99-442-629-2 4 US-99-442-629-110 3 US-08-669-408B-8 5 PCTT-US93-03077-1 2 US-08-160-524A-10 4 US-08-857-076-110 4 US-08-857-076-12 2 US-08-1867-087B-40 4 US-08-857-076-22 3 US-08-9199-637A-425 3 US-08-758-280-1 3 US-08-758-280-2 3 US-08-964-614A-1 3 US-08-964-614A-2 4 US-08-964-614A-2 4 US-08-964-614A-2 5 US-08-964-614A-3 6 US-08-964-614A-3 6 US-08-964-614A-3 7 US-08-964-614A-3
US-09-4/2-9/1-1 US-08-913-805A-10 US-08-913-805A-10 US-08-9442-629-2 US-09-442-629-10 US-08-669-408B-8 PCT-US93-03077-1 US-08-160-524A-10 US-08-857-076-12 US-08-857-076-12 US-08-857-078-12 US-08-857-08-12 US-08-857-08-12 US-08-857-08-12 US-08-857-08-12 US-08-857-08-12 US-08-857-08-12 US-08-857-08-13 US-08-858-280-2 US-08-964-614A-1 US-08-964-614A-2 US-08-964-614A-2 US-08-964-614A-2 US-08-964-614A-2 US-08-964-614A-3 US-08-964-614A-3

ALIGNMENTS

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Sequence 2, Application US/08665617; Patent No. 5663316
                                                                                                                                                   ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-665-617-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: Saliwanchik, David R.
REGISTRATION NUMBER: 31,794
REFERENCE/DOCKET NUMBER: CL-6
TELECOMMUNICATION INFORMATION:
TELEPHONE: (352) 375-8100
                                                                                                                                                                                                                                                                     TELEFAX: (352) 372-5800 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Xudong, Yin TITLE OF INVENTION: Ger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                            CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 166 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: Saliwanchik & Saliwanchik STREET: 2421 N.W. 41st Street, Suite A-1 CITY: Gainesville STATE: Florida COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                  Local Similarity
nes 16; Conserv
                                                                                                                                                                                                   STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE: 530 CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                              1 QRYGRELRRMSDEFVD 16
QRYGRELRRMSDEFVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   32606
                                                                                                                                                                                                                   amino acid
                                                                                                                                                                                                                                 166 amino acids
                                                                                                                                                                                 ss: single
linear
                                                                  Conservative
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                                                                                100.0%;
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                                                                    0;
                                                                                  Score 83;
Pred. No.
                                                                     Mismatches
                                                                    .5e-07;
es 0;
                                                                                                      DB 1;
                                                                                                    Length 166;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELEFAX: (619) 535-8949
INFORMATION FOR SEO ID NO: 2:
SEQUENCE CHARACTERISTICS:
LEMOTH: 168 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                    Sequence 1, April Sequence 1, April 100 6080847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: US/08/717
FILING DATE: 20-SEP-1996
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-10
TELECOMMUNICATION INFORMATION:
TELEPHONE: (6.19) 535-9001
                                                                                                                                                                                                                                                                                                            GENERAL
                                                                                                                                                                                                                                                    APPLICANT: I
APPLICANT: I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET: 43, CONTROL OF THE STREET: 43, CONTROL OF THE STATE: California STATE: United States
COMPUTER READABLE FORM: MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Horne, William A.
APPLICANT: Oltersdorf, Tilman
TITLE OF INVENTION: Human BAD Polypeptides, Encoding Nucleic
TITLE OF INVENTION: Acids and Methods of Use
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
                                                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                            APPLICANT: COTLEY, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 3174 POI
CITY: Palo Alto
                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     y match 100.0%; Score 83; DB 2; Local Similarity 100.0%; Pred. No. 1.5e-07; Pes 16; Conservative 0. Minnether
                                                                                                                             ADDRESSEE:
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    Application US/08717123
    5965703

                                     94304
                                                                       CA
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                                                                                                           3174 Porter Dr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3E: Campbell and Flores
4370 La Jolla Village Drive, Suite 700
                                                    USA
                                                                                                                                                                                                                                     Shah, Purv
                                                                                                                                                                                                                                                                     Yue, Henry
                                                                                                                                                                                                                                                                                        Hillman, Jennifer L
                                                                                                                          Incyte Pharmaceuticals, Inc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US/08/717,123
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US-08-985-335-1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 7, Application Patent No. 6080847
GENERAL INFORMATION:
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FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-0
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE:
ATTORNEY/AGENT INFORMATION:
ANAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF-G
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650.855-0555
                                                                                                                                                                      COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
ABBUTCATTON NUMBER. IF CONTORS 225
                                                                                                        APPLICATION NUMBER: US/08/985,335
FILING DATE: Filed Herewith
PRIOR APPLICATION DATA;
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Corley, Neil C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Hillman, JAPPLICANT: Yue, Henry
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OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
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FILING DATE: Filed Herewith
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                 ZIP: 94304
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TOPOLOGY: 11r
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3174 Porter Dr.
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Pred. No. 1.5e-07;
Nismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 168;
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TOPOLOGY: linear
IMMEDIATE SOURCE:
LIBRARY: GenBank
CLONE: 1683637
US-08-985-335-7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 5
US-09-410-372-1
                                            US-09-410-372-1
                                                                                TELEFAX: 650-845-4166
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 168 amino acids
TYPE: amino acid
STRANDEDUNES: Single
TOPOLOGY: Linear
IMMEDIATE SOURCE:
LITERARY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Application US/09410372 Patent No. 6281334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 16; Conservative (
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                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version 2.0
CURRENT APPLICATION NUMBER: US/09/410,372
FILING DATE:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/985,335
APPLICATION NUMBER: 08/985,335
FILING DATE:
FILING DATE:
APPLICATION NUMBER: 18F0FMATION:
APPLICATION NUMBER: 18F0FMATION:
NUMBER: 18F0FMATION:
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TELEFAX: 650-845-4166
PORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Incyte Pharmaceuticals, Inc.
STREET: 3174 Porter Dr.
                                                                                                                                                                                                                                NAME: Billings, Lucy J.
REGISTRATION NUMBER: 36,749
REFERENCE/DOCKET NUMBER: PF.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 650-855-0555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Hillman, Jennifer L.
APPLICANT: Yue, Henry
APPLICANT: Lal, Preeti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STREET: 31/-
STREET: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REPLICANT: COTIES, NEIL C.
TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL
TITLE OF INVENTION: PROLIFERATION
NUMBER OF SEQUENCES: 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM Compatible OPERATING SYSTEM: DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: U
ZIP: 94304
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                                                         CLONE: 358673
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 83; DB 3; Length 168; Pred. No. 1.5e-07; Mismatches 0; Indels
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US-09-410-372-7
RESULT 7
US-08-33-7
(S-08-31)
Sequence 10, Application US/08333565
Patent No. 5622852
GENERAL INFORMATION:
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Best Local S
Matches 16
                                                                                                                                 108
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                                                                                                                                                        1 QRYGRELRRMSDEFVD 16
                                                                                                                                 QRYGRELRRMSDEFVD 123
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В QY

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; IMMEDIATE SOURCE:
; LIBRARY: GenBank
; CLONE: 1683637
US-09-410-372-7
                                                                                                                                                             NAME: Billings, Lucy J.

REGISTRATION NUMBER: 36,749

REFERENCE/DOCKET NUMBER: PF-O.

TELECOMMUNICATION INFORMATION:
TELEPBONE: 650-85-0555

INFORMATION FOR SEQ ID NO: 7:

SEQUENCE CHARACTERISTICS:
LENGTH: 168 anino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 7, Application Patent No. 6281334 GENERAL INFORMATION:
Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 16; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: 1BM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FastSEQ for Windows Version
CURRENT APPLICATION NDATA;
APPLICATION NUMBER: US/09/410,372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: PROTEINS ASSOCIATED WITH CELL TITLE OF INVENTION: PROLIFERATION UNMARK OF SEQUENCES: 9
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 31/* STREET: GITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/985,335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l Similarity
16; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3: Incyte Pharmaceuticals, Inc. 3174 Porter Dr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hillman, Jennifer L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                     55: single
linear
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                                                                                                                                                                                                                                                                                                             Lucy J. 36,749
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100.0%; Pred. No. 1.5e-07;
Live 0; Mismatches 0;
      0;
                                                                                                                                                                                                                                                                                                        PF-0421 US
  Score 83; DB 4;
Pred. No. 1.5e-07;
Mismatches 0;
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                                    Length 168;
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      0,
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    Gaps
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TELEPAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 10
SEQUENCE CHERACTERISTICS:
LENGTH: 23 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
HOLECULE TYPE: peptide
US-08-333-565-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
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88.0%; Score 73; DB 1; Length 23;
Best Local Similarity 100.0%; Prod. No. 1e-06;
Matches 14; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 10, Applicat
Patent No. 5834209
GENERAL INFORMATION:
APPLICANT: KORSME
                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: 18M PC COMPATIBLE
COMPUTER: 18M PC COMPATIBLE
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NATA:
APPLICATION NUMBER: US/08/661,479
FILLING DATE: 11-JUN-1995
FILLING DATE: 11-JUN-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Ploppy disk
COMPUTER: IBM FC COMPAttble
COMPUTER: IBM FC COMPATTBLE
COMPUTER: IBM FC COMPATTBLE
COMPUTER: IBM FC COMPATTBLE
COMPATTANO SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-CCT-1994
CLASSIFICATION: 435
CLASSIFICATION: 435
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 226-2400
                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: BG1-x/BG1-2 ASSOCIATED CELL DEATH
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: KORSMEYER, Stanley
TITLE OF INVENTION: Bcl-x/Bcl-
TITLE OF INVENTION: REGULATOR
NUMBER OF SEGUENCES: 59
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                 ADDRESSEE: Townsend and Townsend Khourie and Crew STREET: 379 Lytton Avenue CITY: Palo Alto STATE: California
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Townsend and Townsend Khourie and Crew
STREET: 379 Lytton Avenue
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Application US/08661479
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WENTION: Bc1-X/Bc1-2 ASSOCIATED CELL DEATH
US 08/333,565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15726A-000700
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Query Match

98.0%; Score 73; DB 2; Le
Best Local Similarity 100.0%; Pred. No. 2.9e-06;
Matches 14; Conservative 0; Mismatches 0;

Length 59

0;

Gaps

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; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-733-505A-55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 片
                                                                                                                                                                                                                   REGISTRATION MUMBER: 35.197
REGISTRATION MUMBER: 96.54
TELECOMMUNICATION INCOMANTION:
TELEPHONE: (314) 727-5188
TELEPHONE: (314) 727-6092
INFORMATION FOR SEQ ID NO: 55:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 100
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  s-08-733-505A-55
Sequence 55, Application US/08733505A
Patent No. 3856445
GENERAL INFORMATION:
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TELEPHONE: (415) 326-2400
TELEPHAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 10:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OLECULE "

OCTORISE TO POLICE TO POL
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MEDIUM TYPE: Floppy disk
COMPUTES: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
REPERT APPLICATION NUMBER: US/00/733,505A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 530
ATTORNEY/AGENT INFORMAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET:
STREET:
CITY: ST. LOUL
CITY: MISSOURI
USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: 31-OCT-1994
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: 53105
                                                                                                              STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH:
                                                                                                                                                   amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: HOWELL & HAFERKAMP, L.C.
7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                            59 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                             965458
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. 1e-06;
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US-08-733-505A-57

Sequence 57, Application US/08733505A

Patent No. 586445

GENERAL INFORMATION:
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US-08-733-505A-56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TOPOLOGY: linear; MOLECULE TYPE: peptide US-08-733-505A-56
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REGISTRATION NUMBER: 35.197
REFERENCE, DOCKET NUMBER: 9654
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-518
TELEPHONE: (314) 727-6092
INFORMATION FOR SEQ ID NO: 56:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Patent No. barantion:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IFM PC compatible

COMPUTER: THE PC COMPATIBLE

COMPUTER: PC-DOS/MS-DOS

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTMARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/733,505A

FILING DATE:

FILING DATE:

CLASSIFICATION: 1530

ATTORNEY/AGENT INFORMATION:

NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 59 amino acids
TYPE: amino acid
                                                                                                                                                               APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
                                                                                                                                       NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 7733 FOR
CITY: ST. LOUIS
STATE: MISSOURI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                       CITY: ST. LOUIS
STATE: MISSOURI
                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                   46 ORYGRELRRMSDEF 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity 100 les 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: HOWELL & HAFERKAMP, L.C. STREET: 7733 FORSYTH BLVD., SUITE 1400
                                 COUNTRY:
                                                                                                   ADDRESSEE: HOWELL & HAFERKAMP, L.C. STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                           1 QRYGRELRRMSDEF 14
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                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     88.0%; Score 73; DB 2; Le
100.0%; Pred. No. 2.9e-06;
Nismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   965458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 59;
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STRANDEDNESS:
, TOPOLOGY: linear
, MOLECULE TYPE: peptide
US-08-733-505A-57
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-733-505A-58
                                                       ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9654
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
TELEFAX: (314) 727-6092
INFORMATION FOR SEQ ID NO: 58:
SEQUENCE CHARACTERISTICS:
LENGTH: 59 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 58, Application US/08733505A Patent No. 5856445
GENERAL INFORMATION:
APPLICANT: KORSMEYER, STANLEY J.
                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Ver. CURRENT APPLICATION NUMBER: US/08/733,505A FILING DATE: CLASSIFICATION: 530
ATTORNEY/AGRMM ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/733,505A
FILING DATE:
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
NAME: HOLLAND, DONALD R.
NAME: HOLLAND, DONALD R.
NAME: HOLLAND, DONALD R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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Best Local
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INFORMATION FOR SEQ ID NO: 57:
SEQUENCE CHARACTERISTICS:
LENGTH: 59 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 96:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (314) 727-5188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: 7733 FOR CITY: ST. LOUIS STATE: MISSOURI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        46 ORYGRELRRMSDEF 59
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                       STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: HOWELL & HAFERKAMP, L.C.
STREET: 7733 FORSYTH BLVD., SUITE 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 QRYGRELRRMSDEF 14
                       FOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   63105
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l4; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        USA
                       linear
peptide
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100.0%; Pred. No. 2.9e-(
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hes 0;
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US-08-733-505A-58

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RESULT 14
US-08-661-479-2
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                                                                                                                                                                                                                                                                                                                       NAME/KEY: Protein
LOCATION: 1.204
OTHER INFORMATION:
OTHER INFORMATION:
US-08-333-565-2
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US-08-333-565-2
                                                                       Sequence 2, Application US/08661479 Patent No. 5834209
                                                                                                                                                                                                                                      Query Match 88.0
Best Local Similarity 100
Matches 14: Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: (415) 326-2400
TELEPAX: (415) 326-2422
INFORMATION FOR SEG ID NO: 2:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
TELEPAX: anino acids
TYPE: anino acid
TYPE: anino acid
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Best Local Similarity 100
Matches 14; Conservative
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                                                          GENERAL INFORMATION:
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tent No. 5622852
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/333,565
FILING DATE: 31-OCT-1994
CLASSIFICATION: 435
CCLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSE: Townsend and Townsend Khourle and Crew
STREET: 379 Lytton Avenue
CITY: Palo Alto
STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
NAME: SMILT, WILLIAM M
REGISTRATION NUMBER: 30,223
REFERENCE/DOCKET NUMBER: 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: BC1-x/BC1
TITLE OF INVENTION: REGULATOR
NUMBER OF SEQUENCES: 59
                                                                                                                                                                        145 QRYGRELRRMSDEF 158
                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT:
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linear
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KORSMEYER, Stanley J.
WWWNTON: Bcl-x/Bcl-2 ASSOCIATED CELL DEATH
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100.0%; Pred. No.
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100.0%; Pred. No.
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of mouse BAD."
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; NAME/KEY: Protein
; LOCATION: 1.204
; OTHER INFORMATION:
; OTHER INFORMATION:
US-08-661-479-2
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US-08-733-505A-1
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ENDICATION NUMBER: US/08/661,479

FILING DATE: 11-JUN-1995

CLASSIFICATION DATA: US 08/333,565

PRIOR APPLICATION DATA: BAPLICATION DATA: APPLICATION NUMBER: US 08/333,565

FILING DATE: 31-CUT-1994

ANTORNEY/AGENT INFORMATION: MAME:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/08733505A Patent No. 5856445
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COUNTRY:
ZIP: 94301
ZIP: 94301
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
COMPUTER: PC-DOS/MS-DOS
COMPUTER: PC-DOS/MS-DOS
COMPUTER: PC-DOS/MS-DOS
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Best Local Similarity 100.
Matches 14; Conservative
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: KORSNEYER, STANLEY J.
TITLE OF INVENTION: SERINE SUBSTITUTED MUTANTS OF
TITLE OF INVENTION: BCL-XL/BCL-2 ASSOCIATED CELL DEATH REGULATOR
NUMBER OF SEQUENCES: 60
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                            COUNTRY:
                                                                                                                                                                                                                                                                                                          ADDRESSEE: HOWELL & HAFERKAMP, L.C. STREET: 7733 FORSYTH BLVD., SUITE 1400 CITY: ST. LOUIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 QRYGRELRRMSDEF 14
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STREET: 3
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100.0%; Pred. No. 1.1e-1
tive 0; Mismatches
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of mouse BAD."
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOCTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/733,505A
FILLING DATE:
CLASSIFICATION: 530
ATTORNEY,AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 95458
TELECOMMUNICATION INFORMATION:
TELEPAN: (314) 727-5188
TELECOMMUNICATION INFORMATION:
TELEPAN: (314) 727-5188
TELEFAN: (314) 727-5188
INFORMATION FOR SEO ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 204 amino acids
TYPE: amino acid
STRANDEDNESS:
TOPOLOGY: linear
MOLECULE TYPE: protein
US-08-733-505A-1
Search completed: September 20, 2002, 10:37:20 Job time: 408 sec
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Result
No.
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
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Perfect score:
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  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                          Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     seq length: 0 seq length: 2000000000
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Match
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1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*
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Gapop 10.0 , Gapext 0
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16.084 Million cell updates/sec
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Copyright (c) 1993 - 2000
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transcription regu
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hypothetical prote oxidoreductase, so transporter homolo
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hypothetical prote
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45	44	43	42	41	40	39 9	38	37	36	35 5	34	ω ω	32	u L	30
39	39	39	39	39	39	39	9	39	39	9	9	39	χ 9	39	39
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S64604	T02712	AE2452	B71405	SYBSYS	T29772	F90299	CTBPRH	AB0558	FOXR3D	FOXRL2	T31738	T32163	S42107	D86200	E90121
hypothetical prote	similar to late em	two-component hybr	probable kinesin -	valinetRNA ligas	hypothetical prote	acylaminoacyl-pept	site-specific DNA-	trigger factor (im	sigma 2 protein ·	sigma 2 protein -	hypothetical prote	hypothetical prote	RAD51 protein homo	protein F12K11.20	DNA repair protein

## ALIGNMENTS

promot

RESULT A55671

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RESULT 2

RESULT 2

RESULT 2

Glycotes; phydrolase, family 13 - Deinococcus radiodurans (strain R1)

Glycotes; Deinococcus radiodurans

C; Species; Deinococcus radiodurans

C; Species; Deinococcus radiodurans

C; Spate: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 17-Mar-2000

C; Accession: H75403

R; White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, R.J.

M.; Shen, M.; Vamathevan, J.J.; Lam, P; McDonald, L.; Utterback, T.; Zalewski, C.

S; Smith, HO.; Venter, J.C.; Fraser, C.M.

Science 286, 1571-1577, 1999

A;Title: Genome sequence of the radioresistant bacterium Deinococcus radiodurans R1

A;Reference number: A75280; MUID:20036896

A;Accession: H75403

A;Status; preliminary

A;Molecule type; DNA

A;Residues: 1-564 <WHID

A;Cross-references: GB:AE001983; GB:AE000513; NID:g6459123; PIDN:AAF10944.1; PID:g645

A;Experimental source: Strain R1

C;Genetics:
A;Gene: DR1375

A;Map possition: 1

C;Superfamily: alpha-glucosidase; alpha-amylase core homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bad protein - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 00-Mar-1995 #sequence_revision 03-Mar-1995 #text_change 05-Nov-1999
C;Accession: A55671
R;Yang, E.; Zha, J: Jockel, J.; Boise, L.H.; Thompson, C.B.; Korsmeyer, S.J.
Cell 80, 288-291, 1995
A;Title: Bad, a heterodimeric partner for Bcl-x-L and Bcl-2, displaces Hax and A;Reference number: A55671; MUID:95136361
A;Accession: A55671
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-204 <YAN>
A;Residues: 1-204 <YAN>
A;Residues: heterodimer
C;Keywords: heterodimer
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Best Local Sim.
Matches 14;
Query Match
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14; Conservative
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   Score 45;
       DВ
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valine-trnA ligase (imported) - Staphylococcus aureus (strain N315)
(;Specles: Staphylococcus aureus
(;Specles: Staphylococcus aureus
(;Specles: Staphylococcus aureus
(;Specles: Staphylococcus aureus
(;Specles: Staphylococcus aureus
(;Accession: E89949
(;Accession: E89949
(;Accession: E89949
(;Accession: E89949
(;Accession: E89949)
(;Accession: E89949)
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(;Accession: E89949)
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                                                                                                                                                                                   A;Gene: valS
C;Superfamily: valine -- tRNA ligase
                                                                                                                                                                                                                A;Cross-references: GB:BA000018; PID:913701460; PIDN:BAB42754.1; GSPDB:GN00149
A;Experimental source: Strain N315
C;Genetics:
                                                                                                                                                                                                                                                       A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-876 <KUR>
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A:Molecule type: DNA
A:Residues: 1-1248 <STO>
A:Cross-references: GB:AE004720; GB:AE004091; NID:g9949032; PIDN:AAG06332.1; GSPDB:GN001
A:Experimental source: strain PAO1
C:Genetics: Bource: strain PAO1
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Best Local Similarity bi...
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                                                                                     4 GRELRRMSDEFVD 16
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2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 44; DB 2;
Pred. No. 47;
4; Mismatches
                                                                                                                              Score 42: DB
Pred. No. 70;
                                                                                                                  Mismatches
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A; Gene: AT4
A; Map posit
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A; Map po
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membrane transporter - fission yeast (Schizosaccharomyces pombe)
C;Species: Schizosaccharomyces pombe
C;Date: 03-Dec:1999 #sequence_revision 03-Dec:1999 #text_change 18-Feb-2000
C;Accession: T40297
R;Lyne, M; Wood, V; Rajandream, M.A.; Barrell, B.G.; Hilbert, H.; Moestl, D.; Due submitted to the EMBL Data Library, May 1998
A;Reference number: Z1919
A;Reference number: Z1919
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DMA
A;Residues: 1-577 <CINN
A;Cross-references: EMBL:AL023589; PIDN:CAA19050.1; GSPDB:GN00067; SPDB:SPBC36.02c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein AT4930490 (imported) - Arabidopsis thaliana (Species: Arabidopsis thaliana (mouse-ear cress) (Species: Arabidopsis thaliana (mouse-ear cress) (Spate: 16-Feb-2001 *sequence_revision 16-Feb-2001 *text_change 16-Feb-2001 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spacession: F85356 (Spaces
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hypothetical cytosolic protein BMEI1298 [imported] - Brucella melitensis (strain 16M)
c;Species: Brucella melitensis
c;Species: Brucella melitensis
c;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 01-Feb-2002
C;Date: 01-Feb-2002 #sequence_revision 01-Feb-2002 #text_change 01-Feb-2002
C;Accession: AD3414
R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanov
; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; Let
proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella melit
A;Reference number: AD3252; PMID:11756688
A;Accession: AD3414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-447 <STO>
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A;Molecule type: DNA
A;Residues: 1-191 <KUR>
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Best Local Similarity 66.7
Matches 8; Conservative
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Best Local Similarity 33.3%;
Matches 11; Conservative
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position: 4
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Pred. No. 18;
2; Mismatches
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Pred. No. 52;
2; Mismatches
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A;Title: GCR3 encodes an acidic protein that is A;Reference number: A44919; MUID:92380925 A;Mccession: A44919
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A;Map position: 2
C;Superfamily: benomyl/methotrexate resistance protein
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RESULT 9
F84388
hypothetical protein Vng2379h [imported] - Halobacterium sp. NRC-1
C;Species: Halobacterium sp. NRC-1
C;Species: D2-Feb-2001 *sequence_revision 02-Feb-2001 *text_change 02-Feb-2001
C;Accession: F84388
R,Ng, W.V.; Kennedy, S.P.; Mahairas, G.G.; Berquist, B.; Pan, M.; Shukla, H.; Leithauser, B.; Keller, K.; Cruz, R.; Danson, M.J.; Hough, D.W.; Maddocks, Jung, K.H.; Alam, M.; Freitas, T.
Proc. Natl. Acad. Sci. U.S.A. 97, 12176-12181, 2000
A;Authors: Hou, S.; Daniels, C.J.; Dennis, P.P.; Omer, A.D.; Ebhardt, H.; Lu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Cross-references: EMBL.Z48622; NID:g728663; PIDN:CAA88550.1; PID:g728664; MIPS:YMR125WR;Lye, G.; Churcher, C.M.

R;Lye, G.; Churcher, C.M.

R;Lye, G.; Churcher, C.M.

R;Lye, G.; Churcher, C.M.

R;Marces on the EMBL Data Library, May 1995

A;Reference number: S54014

A;Accession: S54494

A;Accession: S54494

A;Molecule type: DNA

A;Residues: 'MFNRKRG', 6-489 <LYE>
A;Cross-references: EMBL:Z49273; NID:g809577; PIDN:CAA89274.1; PID:g809584; MIPS:YMR125WC;Genetics:
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A; Reference number: S53055
A; Accession: S53055
A; Molecule type: DNA
A; Residues: 339-858 <BAD>
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C;Date: 30-Sep-1993 #sequence_revision 30-Sep-1993 #text_change 29-Oct-1999
C;Accession: A44919; S53055; S54494
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A;Map position: 13R
C;Keywords: DNA binding; nucleus
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8; Conservative
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         A.D.; Ebhardt, H.; Lowe,
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; Maddocks,
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C;Genetics:
A;Gene: VNG2379H
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A;Molecule type: DNA
A;Residues: 1-84 <STO>
                                   A;Cross references: GB:AE007317;
C;Genetics:
A;Gene: spr0332
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A; Residues: 1-109 <KUR>
A; Cross references: GB:
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e, R.; Leblanc, D.J.; Lee, L.N.; Lefkowitz, E.J.; Lu, J.; Burgett e, R.; Leblanc, D.J.; Lee, L.N.; Lefkowitz, E.J.; Lu, J.; Matsushim, Y. P.; Sun, P.M.; Winkler, M.E.
J. Bacteriol 183, 5709-5717, 2001
A;Authors: Yang, Y.; Young-Bellido, M.; Zhao, G.; Zook, C.; Baltz, R. A;Title: Genome of the Bacterium Streptococcus pneumoniae Strain R6. A;Reference number: 497872; MUID:21429245; PMID:11544234
A;Accession: D97913
A;Accession: D97913
A;Rosidues: preliminary
A;Molecule type: DNA
A;Residues: 1-113 <KUR>
A;Cross-reference. ^~
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C;Genetics:
A;Gene: SP0372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    conserved hypothetical protein SP0372 [imported] - SC;Species: Streptococcus pneumoniae C;Date: 03-Aug-2001 #sequence_revision 03-Aug-2001 #C;Accession: B95043 R;Tettelin, H.; Nelson, K.E.; Paulsen, I.T.; Eisen, on, J.D.; Umayam, L.A.; White, O.; Salzberg, S.L.; Inson, T.; Hickey, E.K.; Holt, I.E. science 293, 498-506, 2001
                                                                                                                                                                                            A;Authors: Loftus, B.J.; Yang, F.; Smith, H.O.; Venter, J.C.; Dougherty, A;Title: Complete Genome Sequence of a virulent isolate of Streptococcus A;Reference number: A95000; MUID:21357209; PMID:11463916
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66.78;
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MUID:20504483
       PIDN:AAK99136.1; PID:g15457889; GSPDB:GN00174
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Pred. No. 18;
4; Mismatches
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Pred. No.
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M.R.; Radune, D.; Holtzappl
                                                                                                                                                                                     Matsushima, P.;
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A; Experimen
C; Genetics:
A; Gene: PAB
                                                                                                                                                                                                                                                     probable enzyme [imported] - Escherichia coli (strain O157:H7, substrain RIMD 0509952) C;Species: Escherichia coli (C;Date: 18-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001 C;Accession: E91102 R;Accession: E91102 R;Haysahi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Han, C.G. gasawara, N.; Vsaunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001 Phate genome sequence of enterohemorrhagic Escherichia coli 0157:H7 and genca; Accession: E91102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein PAB1640 - Pyrococcus abyssi (strain Orsay)
C;Specles: Pyrococcus abyssi
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 20-Aug-1999
C;Accession: A75088
R;anonymous, Genoscope
submitted to the EMBL Data Library, July 1999
A;Description: Pyrococcus abyssi genome sequence: insights into archaeal chromosome A;Reference number: A75001
A;Accession: A75088
A;Status: preliminary
A;Cross-references: GB:AJ248286; GB:AL096836; NID:g5458366; PIDN:CAB50006.1; PID:e15
A;Cross-references: GB:AJ248286; GB:AL096836; NID:g5458366; PIDN:CAB50006.1; PID:e15
A;Experimental source: strain Orsay
                   RESULT
F65076
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A:Gene: EC3789
C:Superfamily: naphthoate synthase; enoyl-CoA hydratase homology
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C;Species: Escherichia coli
C;Date: 12-Sep-1997 *sequence_revision 17-Sep-1997 *text_change 08-Oct-1999
C;Accession: F65076
R;Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; Burland, V.; Riley, M.;
A.; Rose, D.J.; Mau, B.; Shao, Y.
Sclence 277, 1453-1462, 1997
A;Title: The complete genome Sequence of Escherichia coli K-12.
A;Reference number: A64720; MUID:97426617
A;Recession: F65076
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
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A;Gene: ygfG
C;Superfamily: naphthoate
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A;Accession: A85948
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A;Cross-references: GB:ABD005174; NID:g12517451; PIDN:AAG58045.1; GSPDB:GN00145; UWGP:A;Experimental source: strain 0157:H7, substrain EDL933
A;Experimental source: strain 0157:H7, substrain EDL933
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R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, iller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Nature 409, 529-533, 2001
A;Title: Genome sequence of enterohemorrhagic Escherichia coli (
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Q43521 homo sap
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Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;

Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.

SEQUENCE FROM N.A. NCBI\_TaxID=9606;

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Pesik S.W.;

"Rationale for Bcl-xL/Bad peptide complex formation mutagenesis, and biophysical studies.";

Protein Sci. 9:2528-2534(2000).
                                                                                                      Petros A.M., Nettesheim D.G., Wang Mack J., Swift K., Matayoshi E.D.,
                                                                                                                             STRUCTURE BY NMR OF 103-127.
MEDLINE=21073561; PubMed=11206074;
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MEDLINE-98049554; PubMed-9388232;
Ottille S., Diaz J.-L., Horne W.,
                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. Takayama S., Reed J.C.; Submitted (OCT-1997) to
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                                                                                                                                                                                                                                                                                                                                                                                         WADLINE=97083574; PubMed=8929532;
Wang H.-G., Rapp U.R., Reed J.C.;
"BGL-2 targets the protein kinase Raf-1 to mitochondria.";
Cell 87:629-638(1996).
                                                                                                                                                                     Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases
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"A human protein that interacts
FUNCTION: Promotes cell death. Successfully competes for the binding to Bcl-x(L), Bcl-2 and Bcl-w, thereby affecting the level of heterodimerization of these proteins with BAX. Can reverse the death repressor activity of Bcl-x(L), but not that of Bcl-2 (By
                                                                                                                                                                                                                                                                                                              AND DIMERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                         AND PHOSPHORYLATION BY RAF-1.
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                                                                                                                                                                                                                                                                                                                                       the EMBL/GenBank/DDBJ
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                                                                                                     Y., Olejniczak E.T.,
Zhang H., Thompson C.
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h Bcl-2
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Best Local
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                                                        BAD_MOUSE STANDARD; PRT; 204 AA. 061337; 01-NOV-1997 (Rel. 35, Created) 01-NOV-1997 (Rel. 35, Last sequence update) 01-MAR-2002 (Rel. 41, Last annotation update) Bc12-antagonist of cell death (BAD) (Bc1-2 binding 6) (Bc1-xL/Bc1-2 associated death promoter). BAD OR BBC6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        or send
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             Eukaryota; Metazoa; Chordata;
                                     Mus musculus (Mouse)
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Prissue specificity: Expressed in A wide Variety of Tissues, and in the cytoplasm.

DOMAIN: Intact HH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bol-2 family.

PTM: Phosphorylated on Ser-75 in response to survival stimuli. Subsequent phosphorylation on Ser-99 promotes heteroclimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-118, a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival. Ser-99 is the major site of AKT/PKB phosphorylation, Ser-118 the major site of protein kinase A (CAPK) phosphorylation (by
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              similarity).
SUBCELLULAR LOCATION: Outer mitochondrial membrane. Upon or mitochondrial membrane. Upon or mitochondrial membrane.
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SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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PS01259; BH3; FALS
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          Craniata;
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             Vertebrata; Euteleostomi; •
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-i- FUNCTION: Promotes cell death. Successfully competes for the
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NCBI_TaxID=10090;
[1]
          SEQUENCE
                                                                                                                                                                                                                                 entities
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"Interleukin-3-induced phosphorylation
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MEDLINE-95136361; PubMed-7834748;
                                   MUTAGEN
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6C2BA910205053F7 CRC64;
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lation of BAD through the protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDILINE-98194755; PubMed-9535132; D'Agata V. Magro G., Travall S., Musco S., Cavallaro S., Cavallaro S., Control and expression of the programmed cell death regulator BAD in the rat brain."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. TISSUE=Brain;
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MEDLINE-98034386; PubMed-9369453;
HSU S.Y., Kaipla A., Zhu L., Hsueh A.J.W.;
HSU S.Y., Kaipla A., Ehu L., Hsueh A.J.W.;
"Interference of BAD (Bcl xL/Bcl-2-associated death
apoptosis in mammallan cells by 14-3-3 isoforms and
Mol. Endocrinol. 11:1858-1867(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                055147; 070256, 0904X1;
16-0CT-2001 (Rel. 40, created)
16-0CT-2001 (Rel. 40, Last sequence update)
16-0CT-2001 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
BC12-antagonist of cell death (BAD) (BC1-2 binding
6) (BC1-xL/BC1-2 associated death promoter).
                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-21109372; PubMed-11161472;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Neurosci, Lett. 243:137-140(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A., AND MUTAGENESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ORYGRELRRMSDEF 14
                                                                                                     terminal regions.

TISSUE SPECIFICITY: Expressed in all tissues tested, including obrain, liver, spicen and heart. In the brain, restricted to epithelial cells of the choroid plexus, Isoform alpha is the more abundant form.
DOMAIN: Intact BH3 domain is required by BIK, BID, BAK, BAD AND BAX for their pro-apoptotic activity and for their interaction with anti-apoptotic members of the Bcl-2 family.

PTM: Phosphorylated on Ser-113 in response to survival stimuli. Subsequent phosphorylation on Ser-137 promotes heterodimerization with 14-3-3 proteins. This interaction then facilitates the phosphorylation at Ser-156 a site within the BH3 domain, leading to the release of Bcl-x(L) and the promotion of cell survival.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QRYGRELRRMSDEF 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ch 88.0%;
1 Similarity 100.0%;
14; Conservative
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ore 73; DB 1; Lared. No. 5.1e-05; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            promoter)-induced
P11.*;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Apoptosis;
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RESULT

BIM_MOUSE

BIM_MOUSE

TO 54918; O54920; STANDARD; PRID

AC 054918; O54919; O54920;

DT 16-CCT-2001 (Rel 40, Created)

DT 16-CCT-2001 (Rel 41, Last sequent)

TO 1-MAR-2002 (Rel 41, Last senott)

DE BCL2-11 for BIM.

BCL2111 OR BIM.

CE MARMAR-2002 (Rel 41, Last senott)

SELECTION (Rel 40, Last senott)

CE MARMAR-2002 (Rel 41, Last senott)

CE MARMAR-2004 (Rel 41, Last senott)

CE MARMAR-2004 (Rel 41, Last senott)

CE NAR-2004 (Rel 41, Last senott)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 88.0
Best Local Similarity 100
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch).
     EMBL, AF033523, AAC53374.1:
EMBL; AF031227; AAC15100.1:
EMBL; AF279910; AAF91427.1:
EMBL; AF279911; AAF91428.1:
EMBL; AF279911; AAF91428.1:
InterPro; IPR000712; BCL_2
PROSITE; PS01259; BH3; FALSE_NE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ser-137 is the major site of AKT/PKB phosphorylation, major site of protein kinase A (CAPK) phosphorylation similarity).

Similarity; CONTAINS A BCL-3 HOMOLOGY DOMAIN 3 (BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29
205 #
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Phosphorylation; Alternative splicing.
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-> EELTYSVEELPVRAIAMEGWPLIMSPOSPHYTLPPTPP
EVAMPPLARVPALRAC (IN ISODORM BETA).
S-NA: NO EFFECT ON HETERODIMERIZATION
WITH 14-3-3 PROTEINS.
S-NA: NO HETERODIMERIZATION WITH 14-3-3
PROTEINS. NO HETERODIMERIZATION
WITH BOLZ NOR WITH PROTEIN P11.
SDAGGR -> ERRORK (IN REF. 1).
MM; 7AFA71DAESCF4A81 CRC64;
                                                                                                                                                                                                                                                                                                                                                                            sequence update)
annotation update)
interacting mediator
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Pred. No. 5.2e-05;
0; Mismatches 0;
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PHOSPHORYLATION (BY CAPK AND PKB)
SIMILARITY).

PHOSPHORYLATION (BY CAPK AND PKB)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
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                                                                                                                                                                                                                                                                                                                                                                               of cell death).
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; Murinae; Mus
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BEGULT BIM RESULT
BIM RAT
ACC OBBE
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DT 161
DT 161
DT 011
DT
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Best Local Similarity 61.5
Matches 8; Conservative
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EMBL; AF032460; AAC40030.1; -.
EMBL; AF032461; AAC40031.1; -.
EMBL; AF032461; AAC40031.1; -.
HMGD; MGI:1197519; Bel2111.
InterPro; FPR00712; Bel.2:
PROSITE; PS01259; HH3; FALSE, NEG.
PROSITE; PS01259; HH3; FALSE, NEG.
APOPCOS18; Atternative splicing; Membrane.

VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISSING (IN ISON VARSPLIC 42 127 MISS
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TISSUE-OVARY;

MEDLINE-98400436, Pubmed-9731710;

HBU S.Y., Lin P., Hsueh A.J.W.;

BOD (BC1-2-related ovarian death gene) is an ovarian BH3 domain-
containing proapoptotic Bc1-2 protein capable of dimerization with
diverse antiapoptotic Bc1-2 members.";
diverse antiapoptotic Bc1-2 members."
diverse antiapoptotic Bc1-2 members."
diverse antiapoptotic Bc1-2 members."
diverse antiapoptotic Bc1-2 members."
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                                                                                             SEQUENCE FROM N.A. (ISOFORM BIML). Chen J.; Simon R.P., Chen J.; "Chon J.; "Cloning of rat bimEL and bimL, and ischemia and normal rat brain."; Submitted (MAR-1999) to the EMBL/Ger
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LINES.
1- DOMAIN: THE BH3 DOMAIN IS REQUIRED FOR BCL-2 BINDING AND CYTOTOXICITY.
1- SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -1- SUBJUNT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2 PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BFL-1, AND BHRF-1. DOES PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BFL-1, AND BHRF-1. DOES NOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BCK, BAX OR BAK (BY SIMILARITY).

-1- SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES.
-1- ALTERNATIVE PRODUCTS: 3 ISOFORMS; BLABEL (SHOWN HERE), BIML AND BLAS; ARE PRODUCED BY ALTERNATIVE SPLICING.
-1- ALTERNATIVE SPRODUCTS STATEMENTY SEPLICING.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
[1]
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| :|||: |||
45 RIAQELRRIGDEF 157
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                                                                                                          EMBL/GenBank/DDBJ databases
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MISSING (IN ISOFORM BIMS).
531C176E5F1AC9AA CRC64;
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                                                                                                                                                                                                       their
                                                                                                                                                                                                       differential expression
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TZA_HUMAN STANDARD; PRT; 653 AA.

C 013049;
C 01.NOV-1997 (Rel. 35, Created)
T 01.NOV-1997 (Rel. 35, Last sequence update)
T 01.MAR-2002 (Rel. 35, Last annotation update)
E 2.Inc-finger protein HT2A (72 kDa Tat-interacting promotif-containing protein 32).

N TRIM32 OR HT2A.
S Homo sapiens (Runan).
S Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Butheria; Primates; Catarrhini; Hominidae;
(NOBL_TaxID=9606;
                                                                                             SEQUENCE FROM N.A. BEDIATINE-95297135; PubMed-7778269; MEDLINE-95297135; PubMed-7778269; Fridell R.A., Harding L.S., Bogerd H.P., Cullen B.R.; Tidentification of a novel human zinc finger protein specifically interacts with the activation domain of proteins."; Proteins."; Virology 209:347-357(1995).
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8; Conserv
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Catarrhini; Hominidae;
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MEDIATING

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BIOLOGICAL

that lentiviral

Tat

protein) (Tripartite

Euteleostomi;

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| REMBL; AF065433; AAC23595.1; ...
| REMBL; AF065431; AAC23593.1; ...
| REMBL; AF065431; AAC23593.1; ...
| REMBL; AF065431; AAC23594.1; ...
| REMBL; AF136927; AAD26594.1; ...
| REMBL; AF065431; AAC23594.1; AAC23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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ALTERNATIVE PRODUCTS: 2 ISOFORMS: BOD-L (SHOWN HERE) AND BOD-S;
ARE PRODUCED BY THE USE OF ALTERNATIVE INITIATION SITES. TWO
RURTHER ISOFORMS: BIML AND BOD-M; ARE PRODUCED BY ALTERNATIVE
SPLICING OF BOD-L.
TISSUE SPECIFICITY: MIDELY EXPRESSED.
DOMAIN. THE BH3 DOMAIN IS REDUITED FOR BCL-2 BINDING AND
CYTOTOXICITY.
CYTOTOXICITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EUNCTION: INDUCES APOPTOSIS.
SUBURIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2
SUBURIT: FORMS HETERODIMERS WITH A NUMBER OF ANTIAPOPTOTIC BCL-2
PROTEINS INCLUDING MCL-1, BCL-2, BCL-XL, BF1-1, AND BHRF-1, DDES
ANOT HETERODIMERIZE WITH PROAPOPTOTIC PROTEINS SUCH AS BAD, BOK,
BAX OR BAK.
BAX OR BAK.
SUBCELLULAR LOCATION: ASSOCIATED WITH INTRACYTOPLASMIC MEMBRANES
Score 42; DB 1;
Pred. No. 6;
2; Mismatches
        w
                                                                                                                                         Length 196;
                Indels
        0;
        Gaps
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RESULT 7
AROG_CANAL
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ZN_FING
ZN_FING
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                      p79023;
01-NOV-1997 (Rel. 35, Last sequence update)
01-NOV-1997 (Rel. 35, Last anotation update)
16-OCT-2001 (Rel. 40, Last annotation update)
Phospho-2-dedoxyheptonate aldolase, tyrosine-inhibited
(EC 4.1.2.15) (Phospho-2-keto-3-deoxyheptonate aldolase) (DAHP
synthetase) (3-deoxy-D-arabino-heptulosonate 7-phosphate synthase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SMART; SM00136; BBOX; 1.
SMART; SM00184; RING; 1
PROSITE; PS50119; ZF_BBOX; 1.
PROSITE; PS0058; ZF_RIMC_1; 1.
PROSITE; PS0089; ZF_RIMC_2; 1.
SMART; SM00184; PROSETE; PS0089; ZF_RIMC_1; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL: U18543; AAA86474.1; -. HSSP: P29590; 1BOR. MIM; 602290; -.
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InterPro; IPR000315; Znf_bbox.
InterPro; IPR001841; Znf_ring.
                                                                                                                                                                                                                                                                      Candida albicans (Yeast).
Eukaryota; Fungi; Ascomycota;
Saccharomycetales; mitosporic
NCBI_TaxID=5476;
PARTIAL SEQUENCE FROM N.A. MEDILINE-96207468; PubMed-8625423; Pereira S.A., Livi G.P.; Pereira S.A., Livi G.P.; "Arcmatic amino-acid biosynthesis in Candida albicans: identification of the ARO4 gene encoding a second DAHP synthase.";
                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-ATCC 11651 / B792;
Sousa S., Pereira S.A., I
Submitted (APR-1996) to t
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nes 8; Conservative
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SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER. SIMILARITY: CONTAINS 1 BOX-TYPE ZINC FINGER.
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                                                                                                                                                      L G.P.;
EMBL/GenBank/DDBJ
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RING-TYPE.
B BOX-TYPE.; 2A803B6B801D7390 CRC64;
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                                                                                                                                                                                                                                                                                                       Saccharomycotina;
Saccharomycetales;
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                                                                                                                                                         databases
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                                                                                                                                                                                                                                                                                                          Saccharomycetes; Candida.
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Matches 6
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p34160;
D1-FEB-1994 (Rel. 28, Created)
D1-OCT-1996 (Rel. 34, Last sequence update)
D1-OCT-1996 (Rel. 34, Last annotation update)
O1-OCT-1996 (Rel. 34, Last annotation update)
GCR3 protein (ST01 protein);
GCR3 protein (ST01 protein);
GCR3 OR ST01 OR YMR115W OR YM8564.07 OR YM9553.01.
Saccharomyces cerevisiae (Baker's yeast).
Saccharomyces, Fungi, Ascomycota; Saccharomycetina; Saccharomycetes;
Eukaryota; Fungi, Ascomycota; Saccharomyceta; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CUIT. Genet. 29:441-445(1996).

-i FUNCTION: STEREOSPECIFIC CONDENSATION OF PHOSPHOENOLPYRUVATE (PEP)
-AND D-ERYTHROSE 4-PHOSPHATE (EAP) GIVING RISE TO 3-DEOXY-D-
-ARABINO-HERTULOSONATE-7-PHOSPHATE (DAHP).

-i CATALYTIC ACTIVITY: 2-dehydro-3-deoxy-D-arabino-heptonate 7-
-phosphate + phosphate = phosphoenolpyruvate + D-arythrose 4-
-phosphate + H(2)/O.

-i ENZYME REGULATION: INHIBITED BY TYROSINE (BY SIMILARITY).

-i PACHWAY: FIRST STEP IN THE BIOSYNTHESIS OF CHORISMATE WITHIN
-i PACHWAY: FIRST STEP IN THE BIOSYNTHESIS OF CHORISMATE WITHIN
-i SIMILARITY: BELONGS TO CLASS: I DAHP SYNTHETASE EARLILY.

-i SIMILARITY: BELONGS TO CLASS: I DAHP SYNTHETASE EARLILY.
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HSSP; P00886; 1Q87.
InterPro; LPR001785; DAHP_synth_1.
Pfam; PF00793; DAHP_synth_1; 1.
Probom; PD005960; DAHP_synth_1; 1.
Aromatic amino acid biosynthesis; Lyase; Multigene family.
SEQUENCE 370 AA; 40291 MW; 11E5E324C8D7B6DB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

MEDLINE=93380925; PubMed=1512188;

Uemura H., Jigami Y.;

*GCR3 encodes an acidic protein that is required glycolytic genes in Saccharomyces cerevisiae.";

J. Bacteriol. 174:5526-5532(1992).
                                                   SEQUENCE OF 1-492 FROM N.A.
STRAIN-5288C / AB972;
Lye G., Churcher C. M., Barrell B.G., Rajandream
Submitted (MAY-1995) to the EMBL/GenBank/DDBJ da
                                                                                                                                                                                    SEQUENCE FROM N.A.
Guo Z., Russo P., Sherman F.;
Submitted (XXX-1994) to the F
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Pandit S., Sterngl
SEQUENCE OF 342-861 FROM N.A.
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Mismatches
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RESULT
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RA BBGCOCK K., Churcher C., Barrell B.G., Rajandream M.A., Walsh S.V.;

RA BBGCOCK K., Churcher C., Barrell B.G., Rajandream M.A., Walsh S.V.;

RA BBGCOCK K., Churcher C., Barrell B.G., Rajandream M.A., Walsh S.V.;

RC SUBMITTED FOR EXPRESSION OF GLYCOLYTIC GENES. HAS

CC -!- FUNCTION: REQUIRED FOR EXPRESSION OF GLYCOLYTIC GENES. HAS

CC -!- SUBCELLULAR LOCATION: Nuclear (Probable).

CC -!- SUBCELLULAR LOCATION: Nucl
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EMBL; L07550; -; NOT_ANNOTATED_CDS.
EMBL; L07550; -; NOT_ANNOTATED_CDS.
EMBL; Z49273; CAA89274.1; -
EMBL; Z49273; CAA89274.1; -
EMBL; Z49273; CAA89274.1; -
EMBL; Z49273; CAA89274.1; -
PIR; A44919; AV4919.
SGD; S0004732; STO1.
Interpro: IPR003890; E1F4G_Cent.
Interpro: IPR003891; MIF4G; 1.
SMARR; SM00543; MIF4G; 1.
DNAAN
22 30 NUCLEAR I
DOMAIN 74 801 ASP/GLU-R
DOMAIN 802 825 ARC/LYS-R
CONFLICT 164 164 D-> V (I
CONFLICT 704 704 A-> R (I
SEQUENCE 861 AA; 100017 MW; EDD049
                                      SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
SERAIN-K12 / Mc1655;
MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Blattner F.R., Plunkett G. III, Bloch C.A., Rode C.K., Mayhew G.F.,
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
MAU B., Shao V.;
"The complete genome sequence of Escherichia coli K-12.";
Science 277:1463-1474(1997).

11 SIMILARITY: BELONGS TO THE ENOYL-COA HYDRATASE/ISOMERASE FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ECOLI
LT 9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Escherichia coli.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae; ...
Escherichia.
    This
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les 6; Conser
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    SWISS-PROT entry is copyright. It is produced through a collaboration
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ASP/GLU-RICH (ACIDIC).
ARG/LYS-RICH (BASIC).
D -> V (IN REF. 3).
R -> I (IN REF. 3).
A -> R (LN REF. 3).
A -> R (LN REF. 3).
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Pred. No. 43;
5; Mismatches
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Matches 7
                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PHIC_TRYCR STANDARD: PRT; 380 AA.
019806;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
15-DEC-1998 (Rel. 37, Last annotation update)
Variant-surface-glycoprotein phospholipase C (E
11pase) (Glycosyphosphatidylinositol-specific
(GPI-PLC).
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Pfam; PF00378; ECH; 1.
PROSITE; PS00166; ENOYL_COA_HYDRATASE; 1.
Hypothetical protein; Lyase; Complete proteome.
SEQUENCE 261 AA; 29172 MW; B6A8A13EC2C2EBE0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U28377; AAA69086.1; ALT_INIT EMBL; AE000375; AAC75956.1; ALT_INHSSP; P14604; 2DUB.
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EcoGene; EG12972; ygfG
InterPro; IPR001753; E
                           Pfam; PF00388;
ProDom; PD0416
                                                                                                                                  EMBL; AJ000079; CAA03904.1;
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NCBI_TaxID=5693;
                                                                            InterPro; IPR000909; PI_PLC_X.
InterPro; IPR003633; Varsurfglyc_PPLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
Redpath M., Carnall N.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Trypanosoma cruzi.
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                                                      PI-PLC-X;
                           Varsurfglyc_PPLC; 1
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50.0%;
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Pred. No. 17;
3; Mismatches
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RESULT 11
MTA1_ACEPA
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RX MEDLINE-99077292; pubMed=9862476;

RA XU S.-Y., Xiao J.-P., Ettwiller L., Holden M., Aliotta J., Poh C.L.,

RA Dalton M., Robinson D.P., Petronzio T.R., Moran L., Ganatra M.,

RA Dalton M., Robinson D.P., Petronzio T.R., Moran L., Ganatra M.,

RA Ware J., Slatko B., Benner J. II;

RT "Cloning and expression of the Apall, NspI, NspI, SacI, ScaI, and

RT SapI restriction-modification systems in Escherichia coli.";

RT Mol. Gen. Genet. 260:226-231(1998).

RMOL Gen. Genet. 260:226-231(1998).

RMOL GEN. GENETHYLASE RECOGNIZES THE DOUBLE-STRANDED SEQUENCE

GTGCAC, CAUSES SPECIFIC METHYLATION ON C-7 ON BOTH STRANDS, AND

C GTGCAC, CAUSES SPECIFIC METHYLATION ON C-7 ON BOTH STRANDS, AND

C PROTECTS THE DNA FROM CLEAVAGE BY THE APALI ENDONUCLEASE.

C -1- CATALYTIC ACTIVITY: S-adenosyl-L-methionine + DNA cytosine = S-

C adenosyl-L-homocysteine + DNA 5-methyltytosine.
                                                           Query Match
Best Local
Matches
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PROSITE; PS50007; PIPLC_X_DOMAIN; 1. Hydrolase; Membrane.
DOMAIN 31 205 DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Modification methylase_ApaLI (EC 2.1.1.73) (Cytosine-specific
                                                                                                                                             Transferase; Methyltransferase; Restriction system.
ACT_SITE 81 81 BY SIMILARITY.
SEQUENCE 429 AA; 46547 MW; E011C7D15B33F5F3 CRC64;
                                                                                                                                                                                          Pfam: PF00145; DNA_methylase; 2.
PRINTS; PR00105; C5_MTASE_1; FALSE_NEG.
PROSITE; PS00094; C5_MTASE_1; FALSE_NEG.
                                                                                                                                                                                                                                          EMBL; AF044847; AAC97180.1; REBASE; 3281; M.Apall. InterPro; IPR001525; C5_DNA_meth.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Acetobacter pasteurianus (Acetobacter turbidans).
Bacteria; Proteobacteria; alpha subdivision; Acetobacteraceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        methyltransferase ApaLI) (M.ApaLI).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           052702;
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129
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                               4
                                                                                             Match
                               GRELRRMSDEFVD
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GRDLARLVREFVD
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8; Conser
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7; Conserv
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42736 MW;
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61.5%;
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Pred. No.
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Pred.
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Matches Query Match Best Local

Similarity 50.7; Conservative

48.2%;

Score Pred. 3; Mis

core 40; DB red. No. 45; Mismatches

DB 45;

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Length 631

0;

Gaps

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RESULT
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01-OCT-1996
15-DEC-1998
16-OCT-2001
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BORBU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fraser C.M., Casjens S., Huang W.M., Sutton G.G., Clayton R.A., Fraser C.M., Casjens S., Huang W.M., Dodson R., Hickey E.K., Gwin Dougherty B., Tomb J.F., Fleischmann R.D., Richardson D., Peterson J., Kerlavage A.R., Quackenbush J., Salzberg S., Hanson van Vugt R., Palmer N., Adams M.D., Gocayne J.D., Weidman J., Utterback T., Watthey L., McDonald L., Artiach P., Bowman C., Garland S., Fujii C., Cotton M.D., Horst K., Roberts K., Hatch B. Smith H.O., Venter J.C.;
"Genomic sequence of a Lyme disease spirochaete, Borrelia burgan-feri"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-0CT-1996 (Rel. 34, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
16-DEC-2001 (Rel. 40, Last annotation update)
RNA polymerase sigma factor rpoD (Sigma-70).
                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                            use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and foentities requires a license agreement (See http://www.isb-sib.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                            Pan M., Yeh J., Tsai C.;
Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
-i-FUNCTION: THE SIGMA FACTOR IS AN INITIATION FACTOR THAT PROMOTES
-ATTACHMENT OF THE RNA POLYMERASE TO SPECIFIC INITIATION SITES AND
THEN IS RELEASED. THIS IS THE PRIMARY SIGMA-FACTOR OF THIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF
STRAIN-ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Borrelia burgdorferi (Lyme disease spiroche
Bacteria; Spirochaetales; Spirochaetaceae;
NCBI_TaxID-139;
PROSITE; PS00715; SIGMA70_1; 1.
PROSITE; PS00716; SIGMA70_2; 1.
Transcription regulation; Sigma factor; DNA-directed RNA polymerase;
DNA-binding; Complete proteome.
DNA-binding; Complete proteome.
DOMAIN 419 432 POLYMERASE CORE BINDING (POTENTIAL).
BOMAIN 419 432 PT-H MOTIF (BY SIMILARITY).
SEQUENCE 631 AA; 73642 MM; BD565AB7D8F44796 CRC64;
                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the El
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           burgdorferi
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                                                                                                                                                                                                                                                                                                                           between the Swiss Institute of Bioinf
the European Bioinformatics Institute.
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                                                                                                                  Pfam; PF00140; sigma70;
PRINTS; PR00046; SIGMA7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nature
                                                                                                                                                  Interpro; IPR000943;
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                                                                                                                                                              L; U17591; AAC44104.1; -.
L; AE001171; AAC67061.1; -.
L; U68006; AAC45100.1; -.
L; U68006; AAC45100.1; -.
P; P00579; ISIG.
R; BB0712; -.
                                                                                                                                                                                                                                                                                                                                                                                              BACTERIA. SIMILARITY: BELONGS TO THE SIGMA-70 FACTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390:580-586(1997).
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/ B31;
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Best Local
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                                         RA11_SCHPO STAN
P36601;
01-JUN-1994 (Rel.
01-JUN-1994 (Rel.
16-OCT-2001 (Rel.
                                                                                                                       LT 14
SCHPO
            01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
DNA repair protein rhp51 (RAD51 homolog).
RHP51 OR RAD51 OR SPAC644.14C.
 RHP51 OR RAD51 OR SI
Schizosaccharomyces
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-MSB8 / DSM 3109;

MEDLING-99287316; pubMed-10360571;

Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Nelson K.E., Clayton R.A., Gill S.R., Gwinn M.L., Dodson R.J.,

Haft D.H., Hickey E.K., Peterson J.D., Nelson W.C., Ketchum K.A.,

McDonald L., Utterback T.R., Malek J.A., Linher K.D., Garrett M.M.,

Stewart A.M., Cotton M.D., Pratt M.S., Phillips C.A., Richardson D.,

Heidelberg J., Sutton G.G., Fleischmann R.D., Elsen J.A., White O.,

Salzberg S.L., Smith H.O., Venter J.C., Fraser C.M.;

"Evidence for lateral gene transfer between Archaea and Bacteria from

genome sequence of Thermotoga maritima.";

The THNCTION: HYDROLYSIS OF 6-PHOSPHOGLUCONOLACTONE TO 6-

PHOSPHOGLUCONATE.
                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                  Pfam; PF01182; Glucosamine_iso;
                                                                                                                                                                                                                                                                                                                                   Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                InterPro;
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Bacteria; Thermotogales; Thermotoga.
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PGL OR DEVB OR TM1154.
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30-MAY-2000 (Rel. 39, Last
16-OCT-2001 (Rel. 40, Last
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           phospho-D-gluconate,
phospho-D-gluconate,
pathway: SECOND STEP IN PENTOSE PHOSPHATE PATHWAY.
PATHWAY: RELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6-PHOSPHATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CATALYTIC ACTIVITY: 6-phospho-D-glucono-1,5-lactone +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY: BELONGS TO THE GLUCOSAMINE/GALACTOSAMINE-6 ISOMERASE FAMILY. 6-PHOSPHOGLUCONOLACTONASE SUBFAMILY.
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                                                                                                                                                                                                               ORYGRELRRMSDEF
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6; Conserv
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                                                                                                                                                                                                                                                                                                                       Complete 220 AA;
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                                                                                                         STANDARD;
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25325 MW;
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(Fission yeast)
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annotation update)
(EC 3.1.1.31) (6PGL).
                                                                                                                                                                                                                                                          Score 39;
Pred. No.
                                                                                                                                                                                                                                                                                                                  9B0FD07EE01E60C3 CRC64;
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                                                                                                                                                                                                                                                                     Length 220;
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Matches
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PIR: $34713; $34713

PIR: $42107; $42107

PIR: $37672; $37672

PIR: $36159; $36159
                                                                                                   DNA damage; DNA repair; ATP-binding; DNA recombi
NP_BIND 149 156 ATP (POTENTIAL).
CONFLICT 15 15 T -> M (IN REF. 2 /
SEQUENCE 365 AA; 39823 MW; 9F26EB9FA4F3C2BA
                                                                                                                                                              Pfam; PF00633; HHH; 1.
SMART; SM00278; HhH1; 1.
PROSITE; PS50162; RECA_2; 1.
PROSITE; PS50163; RECA_3; 1.
                                                                                                                                                                                                                                                                                                                                                 EMBL; Z22691; CAA80399.1; --
EMBL; D13805; BAA02963.1; --
EMBL; D13756; CAA80879.1; --
EMBL; Z24756; CAA80878.1; AL7
EMBL; Z24756; CAA80878.1; AL7
EMBL; Z24756; CAA80878.1; AL7
                                                                                                                                                                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Jang Y.K., Jin Y.H., Kim E.M., Hong S.H., Fabre F., Park S.D.;
"Cloning and sequence analysis of rhp51+, a Schizosaccharomyces
homolog of the Saccharomyces cerevisiae RAD51 gene.";
Gene 142:207-211(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lyne M.H., Rajandream M.A., Barrell B.G., Brown Submitted (APR-2000) to the EMBL/GenBank/DDBJ dd-1-FUNCTION: REGUIRED BOTH FOR RECOMBINATION AND DNA DAMAGE CAUSED BY X-RAYS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Muris D.F.R., Vreeken K., Carr A.M., Broughton B.C.,
Lohman P.H.M., Pastink A.;
"Cloning the RAD51 homologue of Schizosaccharomyces
                                                                                                                                                                                                                           InterPro; IPR000445; HHH.
InterPro; IPR003583; HHH_1.
InterPro; IPR001553; RecA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=93364417; PubMed=8358431;
Shinohara A., Ogawa H., Matsuda Y., U
"Cloning of human, mouse and fission
homologous to RAD51 and recA.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
MEDLINE-94051565; PubMed-8233794;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nat. Genet. 4:239-243(1993).
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   N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY: STRONG TO OTH PROKARYOTIC RECA PROTEIN.
   RYGRELRRMSDEF
                            Similarity 53.07; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FROM N.A.
                                                                                                                                                                                                                                                                                                                                                               CAA80879.1; -. CAA80878.1; ALT_INIT.
 14
                                           47.0%;
53.8%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schizosaccharomycetaceae;
                            Score 39; DB Pred. No. 37; 4; Mismatches
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n yeast recombination
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VSI2_RE
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    밁
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Best Local Similarity 50.0%;
Matches 8; Conservative
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VSIZ_REOVD STANDARD; PRT; 418 AA.

P03525;
21-JUL-1986 (Rel. 01, Created)
01-AUG-1990 (Rel. 15, Last sequence update)
01-NOV-1990 (Rel. 16, Last annotation update)
                                                                                                                                 CONFLICT
SEQUENCE
                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.

MEDLINE-89243203; PubMed=2718385;

Wiener J.R., McLaughlin T., Joklik W.K.;

"The sequences of the S2 genome segments of reovirus serotype 3 and of the dsRNA-negative mutant ts447.";

Virology 170:340-341(1989).
                                                                                                                                                                                                                                                             EMBL: M25780; AAA47279.1; -.
EMBL; J02327; -; NOT_ANNOTATED_CDS.
PIR; A31475; FOXR3D.
PIR; A04125; FOXR2D.
InterPro; IPR004317; Sigma_1_2.
Pfam; PF03084; Sigma_1_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sigma 2 protein (Core protein).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Cloning the double-stranded RNA genes of reovirus: sequence of the cloned S2 gene.";
Proc. Natl. Acad. Sci. U.S.A. 79:7644-7648(1982).
-1- MISCELLANEOUS: MUTANT TS447 IS TEMPERATURE SENSITIVE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLLNE-83117734; PubMed=6961439;
Cashdollar L.W., Esparza J., Hudson G.R., Chmelo R.A., Lee P.W.K.,
Joklik W.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reovirus (type 3 / strain Dearing).
Viruses; dsRNA viruses; Reoviridae; Orthoreovirus.
NCBI_TaxID=10886;
                                                                                                                                                                                                                        VARIANT
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326 QLHGFQVRRMVTEFCD 341
                           1 QRYGRELRRMSDEFVD 16
                                                                                                                                 332
418 A
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323
383
383
259
310
                                                                                                                                  AA;
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47161
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323
383
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331
                                                                                                                                  MW;
                                                                                                                               A -> V (IN MUTANT TS447).
A -> V (IN MUTANT TS447).
N -> D (IN MUTANT TS447).
H -> Y (IN REF. 2).
PAVSENHIGWIGRAGNOLHEFQ ->
LQCRVTSMAGLVELVTNCMGSR (IN REF. 2).
MISSING (IN REF. 2).
MW; 0E2F7824DA61DDDC CRC64;
                                                         Score 39; DB 1; Length 418; Pred. No. 42; Mismatches 5; Indels
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                                                           Gaps
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Search completed: September 20, 2002, 11:04:32 Job time:  $1629\ \text{sec}$ 

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Result
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Gapop 10.0 , Gapext 0.5
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83
1 QRYGRELRRMSDEFVD 16
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sp_vertebrate:*
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561 14 0980N3
247 2 0980N3
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	Q98sb7 guillardia	Q9y177 trichomonas	O34437 bacillus su	Q92z20 rhizobium m	rhizobium l	~	Q935eO salmonella	-	N	Q9hqe9 halobacteri			Q9vpi9 drosophila	Q989r4 rhizobium l	Q96zu8 sulfolobus	Q97i40 clostridium	P70750 acetobacter	Q9a311 caulobacter		Q910h8 pseudomonas				Q9hmu7 halobacteri	homo	P78311 homo sapien	P78313 homo sapien	Q9qbu0 potato mop-	

## ALIGNMENTS

RESULT 2 Q9RUK9 Q9RUK9 AC Q9RUK9 DT 01-MAY-2000 (TEBMBLTel. 13, Created)	Query Match: 71.1%; Score 59; DB 13; Length 146; Best Local Similarity 71.4%; Pred. No. 0.03; Matches 10; Conservative 4; Mismatches 0; Indels 0; Gaps 0, Oy 1 ORYGRELERMSDEF 14 Db 93 KYGOOLRRMSDEF 106	RESULT 1 0919N2 1 10 9919N2 1 10 9919N2 1 10 9919N2 10 1-02T-2000 (TrEMBLIFEL. 15, Created) 11 1-02T-2001 (TREMBLIFEL. 19, Last sequence update) 11 1-02T-2001 (TREMBLIFEL. 19, Last sequence update) 12 11 1-02T-2001 (TREMBLIFEL. 19, Last sequence update) 13 11 11 11 11 11 11 11 11 11 11 11 11 1

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RESULT

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KANDALER J112565; Pubmed=11272601;

KANDALER J112565; Pubmed=11272601;

KANDALER J112565; Pubmed=11272601;

KANDALER J112565; Pubmed=11272601;

Tradentification of the var gene as a transcriptional regulator of resistance in Streptomyces virginiae; ";

LU J180110001; PROMINORS

C 1. SIMILARTY: BELONGS TO THE TETR/ACRR FAMILY OF TRANSCRIPTIONAL CREATER J1 SHELL, AB04694; BAB32408.1; ".

REGULATORS.

RESEL, AB04694; BAB32408.1; ".

RESEL, PROMINORS TO THE TETR/ACRR FAMILY OF TRANSCRIPTIONAL CREATER J1 SHESP; POM164; TETR. THE TETR.

PERM; PROM1916; TETR. THE TETR.

PERM; PROM299; tetr. 1.

PERM; PROM299; HTHTETR.

PERM; PROM295; HTHTETR.
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Best Local Similarity 64.3%;
Matches 9; Conservative
                                                                         Query Match
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Science 286:1371-1577(1999).

EMBL: AED01983: AAF10944.1: -.

HSSP: P21332: 1UOK.

TIGR: NR1375; -.

InterPro: IPR000461: Alpha_amylase.

Ffam: PP00128; alpha-amylase; 1.

Hydrolase: Complete protecome.

SEQUENCE 564 AA; 63667 MM; B8F50B980DFCBD51 CRC64;
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Bacteria: Firmicutes: Actinobacteria: Actinobacteridae:
Actinomycetales: Streptomycineae; Streptomycetaceae; Streptomyces.
NCNI_TaxID-1961;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDILIRE-20036896; PUMMed-10567266;
White O., Elsen J.A., Heidelberg J.F., Hickey E.K., Peterson J.D.,
White O., Elsen J.A., Heidelberg J.F., Hickey E.K., Peterson J.D.,
Dodson R.J., Hart D.H., Gehlan M.L., Nelson R.C., Minter S., 18hen M.C.,
Moffet K.S., Oln H., Jiang L., Pamphile W., Crosby M.J. Shen M.C.,
Vanachevan J.J., Lam P., McDonald L., Utterback T., Zalewski C.,
Mekarorow K. A., Aravind L., May M.J., Minten K.M., Fleischmann R.D.,
Mecchum K.A., Nelson K.E., Salzberg S., Smith H.O., Venter J.C.,
Fraeder C.M., Nelson K.E., Salzberg S., Smith H.O., Venter J.C.,
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Ol-JUN-2001 (TrEMBLrel. 17, Last annotation update)
GLYCOSYL HYDROLASE, FAMILY 13.
DR1375
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Bacteria; Thermus/Delnococcus group; Delnococcales; Delnococcus.
NCBI_TexID-1299;
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283 YVREMRRVIDEFDD 296
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ICE 247 AA; 27328 MW; B6326F43374598A8 CRC64;
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RESTRAIN-AFTCC 15692 / PAO1;
RX MEDLINE-20437337; PubMed=10984043;
RX MEDLINE-20437337; PubMed=10984043;
RX MEDLINE-20437337; PubMed=10984043;
RX MEDLINE-20437337; PubMed=10984043;
RX MEDLINE-2043737; PubMed=10984043;
RX MEDLINE-2043737; PubMed=10984043;
RA Stover C.K., Pham X.-O.T., Erringle W.O., Kowalik D.J., Lagrou M.RA AGIPER R.L., Golkry L., Tolerino E., Westbrock-Wadman S., Yuan Y.,
RA Garber R.L., Golkry L., Tolerino E., Westbrock-Wadman S., Yuan Y.,
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RA Garber R.L., Kala A., Laberon E., Messbrock-Wadman S., Yuan Y.,
RA Garber R.L., Miller R.L., Miller R., Miller R., Miller R., Lim R.M.,
RA Garber R.L., Miller R.L., Miller R., Mi
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Matches 7; Conservative
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OSTANONI (TERBIL-el. 19, Last annotation update)
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DYNBIN HEAVY CHAIN, CYTOSOLIC.
L916 heavy Chain (Terbil-el. 1907.05)
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OSHEO3:

OL-MAR-2001 (TERBELFE! 16, Created)

OL-MAR-2001 (TERBELFE! 18, Last sequence update)

OL-COT-2001 (TERBELFE! 18, Last annotation update)

COBACH.N BIOSYNTHETIC PROTEIN COBN.

COBN OR PA3944.
                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-FRIEDIN:
HIBDET H., Wedler E., Duesterhoeft A., Ivens A C
Quall M., Rajandream M.A., Barrell B.C.;
Charlet (JUN-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                         Leishmania major
Eukaryota; Euglenozoa; Kinetoplastida;
NCBI_TaxID=5664;
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Bacteria: Proteobacteria; gamma subdivision; Pseudomonadaceae:
Pseudomonas.
MCBI_TaxID=287;
                                                                         SEQUENCE FROM N A
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4; Mismatches 3; Indels
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5; Mismatches
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01-MAY-2000 (TrEN
01-MAY-2000 (TrEN
01-JUN-2001 (TrEN
CG15612 PROTEIN.
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Genome Res. 8:135-145(1998).
EMBL; Al359781; CAB95305.1; -.
InterPro; IPR000169; Thiolprot_act_site.
PROSITE; PS00639; THIOL_PROTEASE_HIS; UNKNOWN_1.
SEQUENCE 5635 AA; 620050 MW; 64A9EBBBA9B14641 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIJINE-20564611; PubMed=11110908;
Frohlich M.W., Estabrook G.F.;
"Wilkinson Support Calculated with Exact Probabilities: An Example Using Floricaula/LEAFY Amino Acid Sequences that Compares Three Hypotheses Involving Gene Gain/Loss in Seed Plants.";
MOI. Biol. Evol. 17:1914-1925(2000).
EMBL; AF286055; AAG42695.1; -.
EMBL; GF28002910; FLO_LFY.
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Bryophyta;
Polytrichopsida; Polytrichales; Polytrichaceae; Atrichum.
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01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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                                             Eukaryota; Metazoa; Arthropoua; Lianger, Control Muscomorpha; Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophila.
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                                                                                                                   Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata;
                                                                                                                                                                                                                                                                                                                             Q9V7Y6
SEQUENCE FROM N.A.
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RX Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Champe M., Pfeifer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeifer B.D.,
RA Horli J.F., Agbayani A., An H.-J., Andrews Pfeinnkoch C., Baldwin D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Berson K.F., Benos P.V., Berman B.P., Bhandari D., Bolshakov S.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA George C., Georgell J.H., Gu Z., Guna P., Harris M.,
RA George C., Gorrell J.H., Gu Z., Guna P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guna P., Harris M.,
RA Harris N.L., Harvey D., Helman T.J., Hernandez J.R., Houck J.,
RA Harris N.L., Mattei B., McIntosh T.C., Wcledd M.-H., Ibeyamm C.,
RA Harris N., Mottei B., McIntosh T.C., Wcledd M.-H., Ibeyamm C.,
RA Harris N., Mottei B., McIntosh T.C., Wcledd M.-H., McShrefi A.,
ROUNT S.M., Mother B., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Harris N., McLud B., McLintosh T.C., Wcledd M.-H., McLison D.,
RA McFullyov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA McFullyov G., Milshina N.V., Mobarry C., Morris J., Woshrefi A.,
RA McFullyov G., Milshina N.V., Mobarry C., Mury D.M., Wesheer F., Sahn H.,
RA Spier E., Spradling A.C., Staplet
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InterPro; IPR001849; PH.
InterPro; IPR00219; RhoGEF.
Pfam; PF00621; RhoGEF; 1.
SMART; SM00325; RhoGEF; 1.
SMART; SM00325; RhoGEF; 1.
SEQUENCE 415 AA; 49479 MW;
                                                                                                                                                                                 0983J4;
01-0CT-2001 (TrEMBLrel. 18, La
01-0CT-2001 (TrEMBLrel. 18, La
01-0CT-2001 (TrEMBLrel. 18, La
HOMOGENTISATE 1,2-DIOXYGENASE.
                                                            Bacteria; Proteobac
Phyllobacteriaceae;
                                                                                          Rhizobium loti (Mesorhizobium loti)
Bacteria; Proteobacteria; alpha sub
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8; Conservative
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                                                                  Mesorhizobium
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MEDITINE-96427337; PubMed-8830701;
Haigler B.E., Suen W.C., Spain J.C.;
"purification and sequence analysis of 4-metory spanse from Burkholderia sp. strain DNT.'
J. Bacteriol. 178.6019-6024(1996).
EMBL; U68411; AAC44479.1; -.
Interpro; IPR000733; flavo_monooxygenase.
Interpro; IPR002938; Woxy_FAD_binding.
Interpro; IPR002938; Woxy_FAD_binding.
Interpro; IPR003042; Rng_mnoxygenase.
Pfam; PF01360; Monooxygenase.
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Pfam; PF01360; Monooxygenase.
PRINTS; PR00420; RNGMNOXGNASE.
SEQUENCE 548 AA; 59168 MW; 41B508A744131
                         Q960B3
Q960B3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Burkholderia sp. (strain RASC).
Bacteria; Proteobacteria; beta
Burkholderia.
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p71029;
01-FEB-1997 (TrEMBLrel. 02, Created)
01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
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       SD09786P.
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                              Last sequence update)
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RESULT
Q9NQP8
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EMBL; AY052140; AAK93564.1; -. SEQUENCE 592 AA; 69459 MW; CC5FD772459F2A83 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
NCBI_TaxID-7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O9NQP8

Q9NQP8

Q9NQP8

Q1-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
BA67K19-2 (ZINC-FINGER PROTEIN HTZA (72 KDA TAT-INTERACTING PROTEIN))
(TAT-INTERACTIVE PROTEIN, 72-KD).
Pfam; PF01436; NHL; 6.

Pfam; PF00643; zf-B_box; 1.

Pfam; PF00097; zf-C3HC4; 1.

SMART; SM00336; BBOX; 1.

SMART; SM00184; RING; 1.

SMART; SM00190; CYTOCHROME_C; UNKNOWN_1.

PROSITE; PS00186; ZINC_FINGER_C2H2_1; 1.

PROSITE; PS00518; ZINC_FINGER_C3HC4; 1.

DNA-binding; Metal-binding; Zinc; Zinc-finger.

DNA-binding; Metal-binding; Zinc; Zinc-finger.

DNA-BINGER_C53 AA; 71988 MW; D83B1595CA8378FD CRC64;
                                                                                                                                                                                                                                Submitted (FEB-2001) to the EMBL/GenBank/DDBJ databases -i- SIMILARITY: CONTAINS 1 RING-TYPE ZINC FINGER. EMBL; AL133284; CAB92723.1; -. EMBL; BC003154; AAH03154.1; -. HSSP; P29590; 1BOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
NCBI_TaxID=9606;
                                                                                                                                                         InterPro; IPR000822;
InterPro; IPR000315;
InterPro; IPR001841;
                                                                                                                                                                         InterPro; IPR000345; CytC_heme_bind.
InterPro; IPR001258; NHL.
InterPro; IPR001258; Znf_C2H2.
InterPro; IPR000315; Znf_bbox.
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les 8; Conserv
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Pred. No. 1e+0
4; Mismatches
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1e+02;
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Query Match Best Local Similarity

50 61

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Score Pred.

No.

DB 4; 1.1e+02;

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RESULT 093101 ID 93101 ID 093101 ID 093101 ID 09310 ID 01-10 ID 01
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**NEDLINE-21311952; pubmed-11418146;
**X MITODA M.**, Ohth T.**, Uchiyama I.**, Baba T.**, Yuzawa H.**, Kobayashi I.**, A Kuroda M.**, Ohth T.**, Uchiyama I.**, Baba T.**, Lian J.**, Ito T.**, Kanamori M.**, A Cui L.**, Oguchi A.**, Aoki K.I.**, Nagai Y.**, Lian J.**, Ito T.**, Kanamori M.**, A Matsumaru H.**, Mariyama A.**, Murakami H.**, Hosoyama A.**, Mizutani-Ui Y.**, A Matsumaru H.**, Kanamori M.**, Natro C.**, Sekimizu K.**, A Hirakawa H.**, Kuhara S.**, Goto S.**, Yabuzaki J.**, Kanehisa M.**, A Hirakawa H.**, Kuhara S.**, Goto S.**, Yabuzaki J.**, Kanehisa M.**, Hattori M.**, A Hirakawa H.**, Kuhara S.**, Goto S.**, Yabuzaki J.**, Kanehisa M.**, Hattori M.**, A Hirakawa H.**, Kuhara S.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Ogasawara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Namara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Namara N.**, Hayashi H.**, Hiramatsu K.**, Yoshino C.**, Shiba T.**, Hattori M.**, A Namara N.**, Hattori M.**, Hattori M.**, A Namara N.**, Hattori M.**, Hat
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Best Local S
Matches 8
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InterPro; IPR001412; tRNA-synt_1!
InterPro; IPR002301; tRNA-synt_i!e.
InterPro; IPR002301; tRNA-synt_i!e.
InterPro; IPR002303; tRNA-synt_1e.
Pfam; PP00133; tRNA-synt_1; 1.
Pfam; PP00138; TRNA-SYNTHVAL.
PROSITE; PR001986; TRNASYNTHVAL.
PROSITE; PS00178; AA_TRNA_LIGASE_1; 1.
Ligase; Complete proteome.
SEQUENCE 876 AA; 101723 MW; F7629339
                                                                                                                                                                                                                              O931Q1 PRELIMINARY;
O931Q1;
O1-DEC-2001 (TIEMBLIFEL 1
O1-DEC-2001 (TIEMBLIFEL 1
O1-DEC-2001 (TIEMBLIFEL 1
VALINE-TRNA LIGASE.
VALS OR SAV1663.
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Q99TJ8;
Q1-JUN-2001
Q1-JUN-2001
Q1-DEC-2001
SEQUENCE FROM N.A.

MEDLINE-21311952; PubMed-11418146;

Kuroda M., Ohta T., Uchiyama I., Baba T., Yuzawa H.,

Cui L., Oguchi A., Aoki K.-I., Nagai Y., Lian J.-O.,
                                                                                                                           Staphylococcus aureus (strain Mu50), Bacteria; Firmicutes; Bacilus/Clostridium groBacillus/Staphylococcus group; Staphylococcus (NCBI_TaxID=158878;
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Bacteria; Firmicutes; Ba
Bacillus/Staphylococcus
MCBI_TaxID=158879;
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1 (TrEMBLrel. 17,
1 (TrEMBLrel. 19,
1 (TrEMBLrel. 19,
1 LIGASE.
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Bacillus/Clostridium group;
us group; Staphylococcus.
                                                                                                                                                                                                                                                                               19,
19,
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Pred. No. 1.5e
3; Mismatches
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     Kobayashi
Ito T.,
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Best Local S
Matches 8
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Best Local S
Matches 7
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Mizutani-Ui Y., Takahashi N.K., Sawano T., Inoue R.-I., Kaito C.
Sekimizu K., Hirakawa H., Kuhara S., Goto S., Yabuzaki J.,
Kanehisa M., Yamashita A., Oshima K., Furuya K., Yoshino C., Shi
Hattori M., Ogasawara N., Hayashi H., Hiramatsu K.,
"Whole genome sequencing of meticillin-resistant Staphylococcus
aureus.",
Liancet 357:1225-1240(2001).
EMBL; AP003363; BAB57825.1; -.
Ligase: Complete proteome.
EMBL; AP003363; BAB57825.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9KZC5;
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-UNN-2001 (TrEMBLrel. 17, Last annotation update)
HYPOTHETICAL 23.8 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-A3(2);
MEDLINE-97000351; PubMed-8843436;
MEDLINE-97000351; PubMed-8843436;
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SC6F7.17C.
Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Bacteria; Firmicutes; Streptomycineae; Streptomycetaceae; Streptomyces.
     Q9M0B1
                                                                                                                                                                                                                                                                                                                                                      the 8 mb Streptomyces coelicolor A3(2)
Mol. Microbiol. 21:77-96(1996).
EMBL, AL353870; CAB89025.1; -.
InterPro; IPR003265; Endo_3c.
SMART; SM00478; END03c; 1.
Hypothetical protein.
SEQUENCE 216 AA; 23810 MW; DDD7C717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Redenbach M., Kieser H.M., Denapaite D.,
Kinashi H., Hopwood D.A.;
"A set of ordered cosmids and a detailed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=A3(2);
Thomson N.R., Parkhill J.,
Submitted (APR-2000) to th
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Saunders D.C., Harris
Submitted (APR-2000) 1
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8; Conser
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7; Conser
     PRELIMINARY;
                                                                                                                                                                                                                                Conservative
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e EMBL/GenBank/DDBJ databa
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Pred. No. 1.5e
3; Mismatches
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                                                                                                                                                                                                                                                         Score 41;
Pred. No.
     PRT;
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                                                                                                                                                                                                                                   Mismatches
     447
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1.5e+02;
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Search completed: September 20, 2002, 11:03:44 Job time: 1661 sec
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 49.4%; Score 41; DB 10; Length 447; Best Local Similarity 66.7%; Pred. No. 1.1e+02; Matches 8; Conservative 2; Mismatches 2; Indels
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O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 15, Last annotation update)
HYPOTHETICAL 50.8 KDA PROTEIN.
AT4630499.
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Epermatophyta; Magnoliophyta; eddicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBL_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

SED Arabidopsis sequencing project;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AL161577; CAB79767.1; -.

Hypothetical protein.
SEQUENCE 447 AA; 50837 MW; CB24C84F167CE3AF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
Lamar B., Stoneking T., Stumpf J., Mewes H.W., Lemcke K.,
Mayer K.F.X.;
Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases.
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84 RELQRLYDELVD 95
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Maximum Match 100%
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1: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1980.DAT:*
2: /SIDS1/gcgdata/hold-geneseq/geneseqp-emb1/AA1981.DAT:*
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Gapop 10.0 , Gapext 0.5
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(without alignments)
7.765 Million cell updates/sec
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No.	Score	Match	Match Length DB	B	ID	Description
سر	80	100.0	16	20	AAY05423	Ruman BAK BH3 doma
2	80	100.0	16	21	AAB37030	Bcl2 polypeptide B
ω	80	100.0	16	22	AAB71977	Bak BH3 peptide.
4	80	100.0	17	21	AAB37057	Bcl2 polypeptide B
5	80	100.0	26	21	AAY96322	Mammalian Bak Bcl-
o	90	100.0	26	22	AAB70372	BAK BH3 consensus
7	80	100.0	27	21	AAB37004	Bcl2 polypeptide B
8	80	100.0	28	17	AAW06294	GD domain region f
φ	90	100.0	117	19	AAW79535	Truncated Bak poly
10	80	100.0	141	16	AAR77880	Human Cdn-1(71-211
11	80	100.0	152	16	AAR77879	Human Cdn-1(60-211
						,-

45	. 44	43	42	41	40	39	38	37	36	35	34	33	. 32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12
43.5	44	44	44	44	44	45	45	46	46	46.5	46.5	46.5	46.5	46.5	46.5	47	47	47	69	69	74	75	78	78	78	78	80	80	80	80	80	80	80
54.4				55.0						58.1	58.1	58.1	58.1	58.1	58.1	58.8	58.8	58.8	86.2	86.2	92.5	93.8	97.5	97.5	97.5	97.5	100.0	100.0	100.0	100.0			100.0
258	329	291	258	9	9	426	426	842	834	357	329	322	210	182	175	195	165	15	15	15	31	16	208	27	16	16	211	211	211	211	211	211	211
21	21	21	22	21	20	22	22	22	22	21	21	21	21	21	21	22	22	22	22	17	17	21	20	21	21	20	20	19	17	17	17	16	16
AAG55036	AAG24102	AAG24103	AAB96439	AAY70831	AAY05407	AAU35883	AAU35705	AAU38125	AAU34483	AAG43237	AAG43238	AAG43239	AAG08498	AAG08499	AAG08500	AAB85667	AAB85668	AAB85674	AAB85172	AAW06302	AAW06295	AAB37058	AAY05432	AAB37005	AAB37031	AAY05424	AAY05433	AAW79534	AAR81451	AAW03669	AAW03668	787	AAR77876
Arabidopsis thalia		Arabidopsis thalia	Putative sensory t	BH3 domain of huma	Human BAK BH3 doma	Helicobacter pylor	Helicobacter pylor	Salmonella typhi c	E. coli cellular p			Arabidopsis thalia				Human Bc1-2-like p	Human Bcl-2-like p	Human Bcl-2-like p	BH3 domain of Bak	region	GD domain region f	peptide	Mouse BAK protein	polypeptide	Bcl2 polypeptide B	Mouse BAK BH3 doma	Human BAK protein	Bak polypeptide.	Bcl-Y apoptosis-re	Bak-2 protein. Ho	Bak protein. Homo	Cdn-2.	Human Cdn-1. Homo

## ALIGNMENTS

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ARCSULT 1
ARAY054
XX AAY054
AC AAY054
XX O2-JUL
XX O2-JUL
XX BH3 do
KW BH3 do
KW apoptc
KW autoan
KW arthri
XX HOMO S
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XX WO9916
XX O7-OCT
PR 26-SEF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition; arthritis; autoimmune disease; therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              02-JUL-1999 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                             07-OCT-1997;
26-SEP-1997;
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                                       Bcl homology domain 3 polypeptide
                                                                                                                               WPI; 1999-255058/21
                                                                                                                                                                                                                       Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  22-SEP-1998;
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                                                                                                                                                                                                                                                                                                     (UNIW ) UNIV WASHINGTON
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97US-0060133.
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RESULT AAB3
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XX CABA
AC AAB3
XX CABA
AC CACA
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XW COLC
KW COCC
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Best Local S
Matches 16
The invention relates to a peptide conjugate having the formula: (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached to the N-terminus of the peptide, or a side chain of the peptide where the functional group of the side chain is NH2 or OH; or X = O or NH, when the R-X group is attached to the C-terminus of the peptide, or a side chain of the peptide, where the side chain functional group is COC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This sequence represents the BH3 domain of human BAK. The invention relates to a bcl homoLogy domain 3 (BH3 domain), derived from a proapoptotic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conductions, archritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; colorectal; colorectal; colorectal; non-small lung; renal; thyroid; neuroblastoma; lymphocytic leukemia; neurodegenerative disorder; AIDS;
                                                                                                                                                                                                                                        cel1
                                                                                                                                                                                                                                                                                          WPI;
                                                                                                                                                                                  Claim 18;
                                                                                                                                                                                                                                                                                                                          Huang
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                                                                                                                                                                                                                                                                                                                                                             VINU
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                                                                                                                                                                                                                                                                                                                        Wang J,
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RESULT
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Best Local
                       The present sequence was used in an example illustrating an invention relating to an antinycin derivative which modulates apoptosis by binding to a Bol-2 family protein and preferentially induces apoptosis in a cell which over-expresses the Bcl-2 family protein. The antimycin derivative is used in treating an apoptosis rassociated disease and for inducing apoptosis. It is also useful for treating neoplasia and drug resistance. The present sequence binds to the hydrophobic pocket of Bcl-2. A competitive binding assay was used to determine if the site of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bak BH3 peptide.
             antimycin
                                                                                                                                                                Example 6; Page 41;
                                                                                                                                                                                                protein,
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                                                                                                                                                                                                                                                                        Hockenbery
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                                                                                                                                                                                            derivatives that bind to antiapoptotic Bcl-2 for modulating the apoptotic state of a cell
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Pred. No. 1
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CC (R-X)n peptide where n = 1-10; x = C=O, when the R-X group is attached CC (R-X)n peptide where n = 1-10; x = C=O, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O OR NH. CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is CCOH CC or CONH3; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl organized containing one CC or consubstituted with a 1-5C straight or branched chain alkyl group, CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B37058 represent analogues CC of the peptide portion of the conjugate. The peptides represent analogues CC of a Ball group, polypeptide conjugate. The peptide conjugate is CC useful for modulating appropriosis in the cells of a subject, or for CC useful for modulating appropriosis in the cells of a subject, or for CC useful for modulating appropriosis in the cells of a subject, or for CC apoptosis in cancer cells, It is also useful for inhibiting Bcl-2 cC subject affilicted with a cancer characterized by cancer cells that CC express Bcl-2. The cancer includes prostate, colorectal, gastric, cc. con-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or CC acute or chronic lymphocytic and non-lymphocytic leukemia. The peptide
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Matches 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bel-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
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Pred. No. 1.2e-07;
Mismatches 0;
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                                                                                                                      The present sequence is the mammalian Bak Bc1-2 homology domain 3 (BH3) domain, which was used in a sequence alignment with the same domain of a putative version of the mammalian apoptosis regulator BBC3, which was designated BBC3-ORF2. The BBC3 protein, nucleic acids and antibodies are suitable for use in promoting cell death or for preventing apoptosis in malignant cells and those causing autoimmune diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               conjugate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                     Novel polynucleotide encoding a BBC3 protein which is useful for modulating apoptosis, especially in the treatment of cancer and autoimmune diseases \cdot
                                                                                                                                                                                                                Disclosure; Fig 4; 47pp; English.
                                                                                                                                                                                                                                                                                   WPI; 2000-365560/31.
                                                                                                                                                                                                                                                                                                         zhu L,
                                                                                                                                                                                                                                                                                                                                                      02-NOV-1998;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mammal; apoptosis; cell death; BBC3; apoptosis promotion; apoptosis inhibition; malignant cell; autoimmune disease.
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Pred. No. 1.3
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Pred. No. 2.1e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Zhou
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Pred. No. 2.1e-07;
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The invention relates to a peptide conjugate having the formula:

(C (R-X)n-peptide where n = 1-10; x < C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where the Intervious group of the side chain of the peptide, or x < 0 or NH, CC when the R-X group is attached to the C-terminus of the peptide, or x < 0 or NH, CC when the R-X group is attached to the C-terminus of the peptide, or the peptide, where the side chain functional group is COOH CC or two double bonds, cyclobury, cyclopenty, cyclopenty, optionally containing one CC or two double bonds, cyclobury, cyclopenty,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; BG1-2 superfamily; BH3 domain; cell death agonist; BH3; apoptosis modulation; B cell lymphoma/Leukemia 2; cancer; prostate; colorectal; qastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New peptide conjugates for modulating apoptosis or for inhibiting ceil lymphoma/leukemia 2 (Bel-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 18; Page 17; 74pp; English.
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XX
RESULT
AAW79535
ID AAW7
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AC AAW7
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DT 11-J
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 capable of mimicking its structure and/or function. The present sequence represents a GD domain corresponding to amino acid residues 67-94 of Bak. An antibody raised against a GD domain may be used to screen a CDNA expression library for clones comprising cDNA inserts encoding immunocrossreactive proteins. Truncated GD domain peptides have been shown to maintain the protein binding and cell killing function exhibited by wild type Bak. These molecules may induce apoptosis in tumour cell. These peptides act independently of p53 status. Bak or GD domain mimetics that inhibit Bcl-2 may be selectively toxic to certain tumours, e.g. follicular lymphoma, which depend on high levels of Bcl-2 for their continued growth and survival. GD domain mimetics may also be used for combatting viral infections by causing apoptosis
  11-JAN-1999
                                                        AAW79535;
                                                                                                             AAW79535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bak
and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 2; Page 52; 69pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide(s) comprising GD domains - have similar activities to wild type Bak, and cause cellular apoptosis for treatment of viral
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chittenden TD,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (IMMU-) IMMUNOGEN INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Apoptosis; follicular lymphoma; tumour; p53; antibody
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GD domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                29-JUL-1997
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                                                                                                                                                                                                                                                        g,
                                                                                                                                                                                                                                                                                     1 GQVGRQLAIIGDDINR 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  infected cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    term GD domain refers to a protein domain first identified in and shown to be essential for the interaction of Bak with Bcl-x(L) for Bak's cell killing function; and to peptides and/or molecules
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1996-518805/51.
                                                                                                                                                                                                                                                     gqvgrqlaiigddinr 21
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                                                                                                             standard; Protein; 117
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(first
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for Bak amino acid residues 67-94.
entry)
                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                               Score 80; I
Pred. No. 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                            DB 17;
.2e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                    Length 28;
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AAR77880
ID AAR7
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AC AAR7
AC AAR7
AC 11-N
DT 21-N
XX
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Cdn
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KW Cdn
KW autc
KW autc
KW shoc
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OS Homc
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                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                    This is the amino acid sequence of Bak-delta2-TM, a truncated polypeptide comprising amino acids 71-187 of Bak (see AAW79534). A nucleotide sequence encoding Bak-delta2-TM was obtained from cDNA by PCR and cloned as an in-frame fusion to the GAL4-DNA binding domain in vector pAS2-1. The construct was used in a two-hybrid screen of human heart cDNA for the identification of clones encoding Bak binding proteins. The invention relates to a novel Bak binding protein (BBP, see AAW79537), the gene encoding B (see AAV61499), methods for detecting substances that alter the specific binding between Bak and BBP, as well as diagnostic and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New Bak-binding protein and related nucleic acid, vectors, transformed cells and antibodies - are useful for modulation of apoptosis in cancer, neuro-degeneration etc., also peptide fragments of Bak that interact with the protein
                                                                              Cdn-1; apoptosis modulator; adoptive immunotherapy; therapy;
autoimmune disease; reperfusion injury; hepatitis, osteoporos
                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1998-521220/44.
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20-MAR-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell proliferation; infection; human; therapy; diagnosis.
                                                                                                                      Human Cdn-1(71-211).
                                                                                                                                                                                                       AAR77880 standard; Protein; 141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page 53; 77pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Truncated Bak polypeptide Bak-delta2-TM
              WO9515084-A
                                      Homo sapiens
                                                                  shock;
                                                                                                                                                  21-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                         therapeutic methods utilising BBP.
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                                                                                                                                                                                                                                                                                                 1 GOVGROLATIGDDINR 16
                                                                                                                                                                                                                                                                    death;
                                                                 lymphoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fitzpatrick PA,
                                                                                                                                                                                                                                                                                                                                                                                                117 AA;
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                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                 (first entry)
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97US-0041328
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                                                                    eczema.
                                                                                                                                                                                                                                                                                                                                         100.0%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gibson
                                                                                                                                                                                                                                                                                                                             0;
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Pred. No.
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                                                                                                                                                                                                                                                                                                                             Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Kiefer
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                                                                                                                                                                                                                                                                                                                                                        DB 19;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bcl-2; apoptosis;
                                                                                                                                                                                                                                                                                                                                                       Length 117;
                                                                                                                                                                                                                                                                                                                             Indels
                                                                               osteoporosis;
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Best Local S
Matches 16
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                                                                                                                                                                                                                                                        Cdn-1; apoptosis modulator; adoptive immunotherapy; therapy; HIV; autoimmune disease; reperfusion injury; hepatitis, osteoporosis; shock; lymphoma; eczema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell survival in response to anti-Fas-mediated apoptosis. Deletion of the N-terminal 70 amino acids of Cdn-1 improved this activity, suggesting that small, truncated Cdn-1 molecules may be
         New nucleic acid sequences encoding Cdn apoptosis modulators related vectors, transformed cells, proteins and antibodies, or diagnosis and treatment e.g. of HIV infection, reperfusion
                                                                                                                             07-OCT-1994;
30-NOV-1993;
                                                                                                                                                                                       08-JUN-1995
                                                                                                                                                                                                                                                                                                                                21-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                            AAR77879 standard; Protein; 152
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30-NOV-1993;
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                                                         WPI; 1995-215106/28
                                                                                                                                                                30-NOV-1994;
                                                                                                                                                                                                                                                                                                         Human Cdn-1(60-211).
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                                                                                                      (LXRB-) LXR
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                                                                                                                                                                                                                                   sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                therapeutics
                                                                                Kiefer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kiefer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          141 AA;
                                                                                                      BIOTECHNOLOGY INC
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93US-0160067.
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93US-0160067.
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100.0%; Pred. No. 1.3e-06;
Live 0; Mismatches 0;
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            reperfusion injury
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RESULT
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Best Local :
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Best Local
Matches
                                                                                  Cdn-1 cDNA was isolated from a human heart cDNA library using a previously isolated clone as probe. Recombinant Cdn-1 was produced in Sf9 and human colon adenocarcionma HT29 cells. Expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell
                                                                                                                                                                      New nucleic acid sequences encoding Cdn apoptosis modulators - and related vectors, transformed cells, proteins and antibodies, useful or diagnosis and treatment e.g. of HIV infection, reperfusion injur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell survival in response to anti-Fas-mediated apoptosis. Deletion of the N-terminal 59 amino acids of Cdn-1 only slightly decreased this activity, suggesting that small, truncated Cdn-1 molecules may be potent therapeutics.
                                                                                                                                                                                                                                                                                                                                                                                                                         Cdn-1; apoptosis modulator; adoptive immunotherapy; therapy; HIV;
autoimmune disease; reperfusion injury; hepatitis, osteoporosis;
                                                                                                                                                                                                                                                                                            07-OCT-1994;
30-NOV-1993;
                                                                                                                                                                                                                                                                                                                             30-NOV-1994;
                                                                                                                                                                                                                                                                                                                                                                                                              shock; lymphoma; eczema
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human Cdn-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR77876;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR77876 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                    Sequence
                                                                         survival in
                                                                                                                                         Disclosure; Fig.3A-B; 66pp;
                                                                                                                                                                                                                   N-PSDB;
                                                                                                                                                                                                                                                   Barr PJ, Kiefer MC;
                                                                                                                                                                                                                                                                                                                                                 08-JUN-1995.
                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig.11; 66pp; English
                                                                                                                                                                                                                                                                        (LXRB-) LXR BIOTECHNOLOGY INC
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                                                                                                                                                                                                                   1995-215106/28.
DB; AAQ95492.
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16; Conser
16;
         Similarity
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                                                    211 AA;
                                                                        response to anti-Fas-mediated apoptosis.
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Conservative
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                                                                                                                                                                                                                                                                                            94US-0320157.
93US-0160067.
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          100.0%;
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                    .0%;
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                                                                                                                                         English.
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          Score 80;
Pred. No.
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Pred.
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Mismatches
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thes 0;
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                     DB 16;
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0;
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Indels
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                     211;
0;
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Gaps
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RESULT 1
AAW03668
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AAR77877
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   EXXEXXEXXED
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                                                                                                                                                          Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                         Cdn-2 cDNA was isold. from a human placental genomic library using a 950 bp fragment of Cdn-1 cDNA. Expression of Cdn-2 in mouse progenitor B-cell FL5.12 cells decreased IL-3-induced apoptosis. The Cdn-2 protein displayed 97% amino acid identity with Cdn-1 (AAR77876).
 Human; Bak; apoptosis; latency; virus replication;
                  Bak protein.
                                                        AAW03668;
                                                                         AAW03668 standard; Protein; 211 AA
                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                 Disclosure; Fig.5D-E; 66pp; English.
                                                                                                                                                                                                                                                                                                           New nucleic acid sequences encoding Cdn apoptosis modulators related vectors, transformed cells, proteins and antibodies, up of diagnosis and treatment e.g. of HIV infection, reperfusion
                                                                                                                                                                                                                                                                                                                                                                             Barr PJ,
                                                                                                                                                                                                                                                                                                                                                                                                                  07-OCT-1994;
30-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                             30-NOV-1994;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9515084-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cdn-2; apoptosis modulator; adoptive immunotherapy; therapy; HIV;
autoimmune disease; reperfusion injury; hepatitis, osteoporosis;
shock; lymphoma; eczema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              21-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR77877;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR77877 standard; Protein;
                                     22-FEB-1997
                                                                                                                                                                                                                                                                                                                                                                                              (LXRB-) LXR BIOTECHNOLOGY INC
                                                                                                                       72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GQVGRQLAIIGDDINR
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| 72 gqvgrqlaiigddinr
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                                                                                                                                1 GQVGRQLAIIGDDINR 16
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DB; AAQ95493.
                                                                                                                      gqvgrqlaiigddinr
                                                                                                                                                         15; Conservative
                                                                                                                                                                                                                                                                                                                                                                             Kiefer MC
                                                                                                                                                                                                          211 AA;
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                                     (first
                                                                                                                                                                                                                                                                                                                                                                                                                 94US-0320157.
93US-0160067.
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                                     entry)
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                                                                                                                                                           0;
                                                                                                                                                                    Score 80;
Pred. No.
                                                                                                                                                          Mismatches
                                                                                                                                                                   , DB 16;
, 2.1e-06;
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                  ...
                                                                                                                                                                                                                                                                                                             injury
                                                                                                                                                           Gaps
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RESULT 1
AAW03669
ID AAW03669
AC AAW0
AC AAW0
AC BAk-
XX BAk-
XX BAk-
XX Humme
KW Epst
KW Epst
KW prot
XX promosom
XX W W090
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Human; Bak-2; apoptosis; latency; virus replication; Epstein-Barr virus; BHRFI; fusion protein; epitope tag; drug screening; co-precipitation; ELISA; immunoassay; a

trapping; virucide;

; immunoassay; antibody; antitumour; diagnostic.

protein interactive

24-OCT-1996 W09633416-A1. Homo sapiens. Bak-2 protein.

22-FEB-1997

entry)

AAW03669 standard; Protein; 211 AA.

72 gqvgrqlaiigddinr 87 GQVGRQLAIIGDDINR 16

Mismatches

Indels

0;

Gaps

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Matches
                Query Match
Best Local
                                                                                                                    This Bak protein sequence represents a bcl-1 homologue which interacts with Epstein-Barr virus (EBV) early lytic cycle BHRF1 protein, and is capable of modulating apoptosis. The protein may be used in complete or partial form, or as an epitope tag fusion protein, in a new virucide drug screening method, which involves combination of Bak protein and a viral protein (e.g. EBV BHRF1), exposure to a test compound, and monitoring for disruption of the interaction, e.g. by co-precipitation, protein interactive trapping or ELISA. Interaction of Bak and viral proteins allows viral replication or latency in the absence of apoptosis. Compounds which inhibit the interaction may be used as virucide, antitumour or
                                                                                                                                                                                                                                                                                                                                                            Screening agent to o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Epstein-Barr virus; BHRFI; fusion protein; epitope tag; drug screening; co-precipitation; ELISA; immunoassay; antibody; protein interactive trapping; virucide; antitumour; diagnostic.
                                                                             Sequence
                                                                                                          diagnostic agents.
                                                                                                                                                                                                                                                                                                            Disclosure; Fig 1; 24pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; AAT42138
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Barr PJ, Kiefer MC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   20-APR-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-OCT-1996.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (LXRB-)
    Local
hes :
                                                                                                                                                                                                                                                                                                                                                                                                                         1996-485886/48.
 16;
                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LXR BIOTECHNOLOGY INC
                                                                                                                                                                                                                                                                                                                                                        y for anti-viral agents - by detecting the ability of disrupt the interaction of a Bak protein and a viral
                                                                             211 AA;
Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96WO-US05639
             100.0%;
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              Score 80; DB 17;
Pred. No. 2.1e-06;
                             Length 211;
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Search completed: September 20, 2002, 10:35:58 Job time: 426 sec
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                                                                                                                                       Query Match 100.
Best Local Similarity 100.
Matches 16; Conservative
                                                                                                                                                                                                                                                          This Bak-2 protein sequence represents a bol-1 homologue which interacts with Epstein-Barr virus (EBV) early lytic cycle BHRF1 protein, and is capable of modulating apoptosis. The protein may be used in complete or partial form, or as an epitope tag fusion protein, in a new virucide drug screening method, which involves combination of Bak-2 protein and a viral protein (e.g. EBV BHRF1), exposure to a test compound, and monitoring for disruption of the interaction, e.g. by co-precipitation, protein interactive trapping or ELISA. Interaction of Bak-2 and viral proteins allows viral replication or latency in the absence of apoptosis. Compounds which inhibit the interaction may be used as virucide, antitumour or diagonatic general.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Screening for anti-viral agents - by detecting the ability of an agent to disrupt the interaction of a Bak protein and a viral protein
                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                   diagnostic agents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 2; 24pp; English.
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N-PSDB; AAT42139.
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                                                                            72
                                                                         Kiefer MC;
                                                                                                                                                                                                                     211 AA;
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                                                                                                                                                      100.0%;
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Pred. No. 2.1e-06;
); Mismatches 0;
                                                                                                                                                                   Length 211;
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Maximum DB seq
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Sequence:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Issued_Patents_AA:*
1: /cgn2_6/ptodata/2,
2: /cgn2_6/ptodata/2,
3: /cgn2_6/ptodata/2,
4: /cgn2_6/ptodata/2,
5: /cgn2_6/ptodata/2,
6: /cgn2_6/ptodata/2,
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Maximum Match 100%
Listing first 45 summaries
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80
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Copyright (c) 1993 - 2000 Compugen
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/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/BCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/backfiles1.pep:*
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         US-09-236-385A-35

US-09-236-385A-36

US-08-440-391-18

US-08-908-597A-18

US-08-908-597A-18

US-08-908-597A-18

US-09-236-385A-2

US-09-236-385A-12

US-08-40-391-14

US-08-40-391-14

US-08-40-391-14

US-08-40-391-14

US-08-471-058-23

US-08-471-058-23

US-08-471-058-23

US-08-471-058-7

US-08-471-058-7

US-08-471-058-7

US-08-471-058-10

US-08-471-058-11

US-08-471-058-11

US-08-471-058-11

US-08-944-530-2

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Search time 75.64 Seconds (without alignments) 5.167 Million cell updates/sec
        Sequence 35, Appl.
Sequence 2, Appl.
Sequence 18, Appl.
Sequence 18, Appl.
Sequence 2, Appl.
Sequence 2, Appl.
Sequence 2, Appl.
Sequence 14, Appl.
Sequence 23, Appl.
Sequence 23, Appl.
Sequence 23, Appl.
Sequence 23, Appl.
Sequence 27, Appl.
Sequence 37, Appl.
                                                                                                                                                                                                                                                                                                                                          Description
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US-09-26-385A-35
; Sequence 35, Application US/09236385A
; Patent No. 6221615
; PATENTION:
GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.; and
; APPLICANT: CHITTENDEN, Thomas D.; and
                                                                                                                     TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION:
US-09-236-385A-35
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                                                         Query Match 100.
Best Local Similarity 100.
Matches 16; Conservative
                                                                                                                                                                                  TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 35:
SEQUENCE CHARROTERISTICS:
LENGTH: 19 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZIP: 20004

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: Patentin PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-199
CLASSIFICATION: 
    CHARTION: COMPATION:
    NAME: WIXON, HENRY N.

            N
                          1 GQVGRQLAIIGDDINR 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION:
                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION:
            GQVGRQLATIGDDINR
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CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                           REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EE: Hale and Dorr
1455 Pennsylvania Avenue, N.W.
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                                                                       .0%;
                                                                                                                                     SEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-471-057-11
US-09-236-385A-37
US-08-440-391-3
US-08-440-391-16
US-08-908-597A-16
US-08-908-597A-16
US-09-236-385A-3
US-08-908-397A-16
PCT-US96-06122-3
PCT-US96-06122-16
US-08-440-391-20
US-08-440-391-20
US-08-908-597A-10
US-08-908-597A-10
US-08-908-597A-10
US-09-236-385A-10
US-09-236-385A-20
US-09-236-385A-30
US-09-236-385A-30
US-09-236-385A-30
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                                                            Score 80; DE
Pred. No. 3.6
0; Mismatches
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                                                             . 3.6e-08; ches 0;
                                                                                   DB 4; Length 19;
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Indels

0;

Gaps

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; MOLECULE TYPE: peptide
; SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-236-385A-36
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GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local :
                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/08440391
Patent No. 5656725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
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                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
ZIP: 2000-
COMPUTER READABLE FORM:
COMPUTER: RIPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
COFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: 202-942-840
TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 36
SEQUENCE CHARACTERISTICS:
LENGTH: 20 amino acid
                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                               APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, ROBETT J.
TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                          STREET: 1455 Penns
CITY: Washington
STATE: D.C.
ZIP: 20004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 100 es 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GQVGRQLAIIGDDINR 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: Unknown>
ATTORNEY/ACENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LUTZ, ROBERT J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Washington
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1455 Pennsylvania Avenue, N.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 amino acids
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; TOPOLOGY: 11; MOLECULE TYPE: US-08-440-391-18
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US-08-440-391-18
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                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: DBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTMARE: Patentin Release *1.0, Version *1.25
CURRENT APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: MIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100
Best Local Similarity 100
Matches 16; Conservative
Query Match 100.0%; Score 80; Di
Best Local Similarity 100.0%; Pred. No. 5.
Matches 16; Conservative 0; Mismatches
                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8404
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION UNMER: 32,073
REFERENCE/DOCKET NUMBER: 1043
TELECOMMUNICATION: INFORMATION:
TELEPHONE: 202-942-8400
TELEFAX: 202-942-848
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CHITTENDE APPLICANT: LUTZ, Rob TITLE OF INVENTION: TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acid
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                                                                                                                                            LENGTH: 28 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1455 Penr
CITY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE:
                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GQVGRQLAIIGDDINR 16
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6 GQVGRQLAIIGDDINR 21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18, Application US/08440391
5. 5656725
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1455 Pennsylvania Avenue, N.W.
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                                                                                                        peptide
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12-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Robert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DEERT J.
NOVEL PEPTIDES AND COMPOSITIONS WHICH
MODULATE APOPTOSIS
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                                                                                                                                                                                                                                                                        104322.147
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Pred. No. 5
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 .7e-08;
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                                 Length 28;
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   Indels
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US-08-yu.

Sequence 18, Applic...

Sequence 25863795

Patent No. 5863795

PAPLICANT: CHITTENDEN, Thomas D.; and ApplicaNT: CHITTENDEN, Thomas D.; and TITLE OF INVENTION: NOVEL PETTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS NUMBER OF SEQUENCES: 34

CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OPERATING SYSTEM: FULLWALL SOFTWARE: PATENTIN BANA:
SOFTWARE: PATENTIN DATA:
APPLICATION DATA:
APPLICATION NUMBER: US/08/908,597A
FILING DATE:
APPLICATION NUMBER: US/08/440,391
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION UNMBER: 32,073
REFERENCE/DOCKET NUMBER: 104322.147
TELECOMMUNICATION INFORMATION:
TELEFAN: 202-942-8400
TELEFAN: 202-942-8400
TELEFAN: 202-942-8464
INFORMATION FOR SED ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acid
TYPE: amino acid
TYPE: amino acid
TYPE: amino acid
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US-08-908-597A-2
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US-08-908-597A-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100.0%; score 80, 5)
Best Local Similarity 100.0%; pred. No. 5.
Matches 16; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: CHITTENDEN, Thomas D., GILL
APPLICANT: LUTZ, ROBERT J.
TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IN PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
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STATE: D.C.
STO: 20004
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CITY: Washington
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1455 Pennsylvania Avenue,
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TELEPHONE: 202-942-8400
TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 11
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-998-597A-18
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US-09-236-385A-2
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/908,597A
FILING DATE: 1530
PCLASSIFICATION: 530
PCLASSIFICATION: DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORREY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32.073
REFERENCE/DOCKET NUMBER: 32.073
REFERENCE/DOCKET NUMBER: 104322.147
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/09236385A Patent No. 6221615 GENERAL INFORMATION:
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Best Local Similarity
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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ZIP: 20004
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OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTMARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DAVA:

ETLING DATE: 25-Jan-1999

CLASSIFICATION: CUBKNOWN>
ATTORNEY ARENT INFORMATION:

AME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: CHITTENDEN, Thomas D.; and
LUT2, Robert J.
TITLE OF INVENTION: MOVEL PEPPIDES AND COMPOSITIONS WHICH
MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1455 Penr
CITY: Washington
STATE: D.C.
                                                                                                                              REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
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100.0%; Pred. No. 5.7e-08;
Live 0; Mismatches 0;
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                                                                                                        ATTORNEY DOCKET NO. 104322,147CIP
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-6400
TELEPHONE: 202-942-6400
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
TYPE: amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION: SEQ ID NO: 18:
US-09-236-385A-18
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US-09-236-385A-18
US-09-236-385A-18
; Sequence 18, Application US/09236385A
; Patent No. 6221615
; GENERAL INFORMATION:
GENERAL INFORMATION:
LUTZ, ROBERT J.
NOVEL PEPTIDES AND APPLICANT: NOVEL PEPTIDES AND APPLICANT.
RESULT 9
PCT-US96-06122-2
Sequence 2, Application PC/TUS9606122
SEQUENCE 1NFORMATION:
APPLICANT: IMMUNOGEN, INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH: 28 amino acid

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide

SEQUENCE DESCRIPTION: SEQ ID NO: 2:

US-09-236-385A-2
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Best Local Similarity 100.0%; Pred. No. 5.7
Matches 16; Conservative 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZIP: 20004

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: PC COS_MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURREWT APPLICATION NUMBER: US/09/236,385A
RILING DATE: 25-Jan-1999
CIASSIFICATION: CIURNOWN>
ATTONNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
NAME: WIXON, HENRY N.
                                                                                                                                                                       6 GQVGRQLAIIGDDINR 21
                                                                                                                                                                                                1 GOVGROLATIGDDING 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Haie and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANA. LUTZ, ROBERT J.

TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 1455 Peni
CITY: Washington
STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 32,073
(C) AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY DOCKET NO. 104322.147CIP
                                                                                                                                                                                                                                          DB 4;
5.7e-08;
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                                                                                                                                                                                                                                                                                    Length 28;
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                                                                                                                                                                                                                                                 Indels
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PCT-US96-06122-18
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Best Local S
Matches 16
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TITLE OF INVENTION: MODILATE AND COMPOSITIONS
HINDER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
HAMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSE: HALE and DOT'
ADDRESSE: HALE and DOT'
COMPUTER READBLE FORM:
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Best Local Similarity
Matches 16; Conserv
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                                              Matches
                                                           Query Match
Best Local (
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TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                             TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
                                                                                                                                                                                                                                          TELECOMMUNICATION INFORMATION: TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 10
                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, Robert J.
                                                                                                                                      MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cli.
STATE: U..
To: 20004
                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME: WIXON, HENRY N. REGISTRATION NUMBER:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 1455 Penr
CITY: Washington
                                                                                                                                                   TYPE: amino acid TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: FILING DATE: 12-MAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ENGTH:
                                              Local Similarity 100 les 16; Conservative
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                                                                                                                                                                                  LENGTH:
1 GQVGRQLAIIGDDINR 16
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GY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Application US/08440391
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28 amino acids
                                                                                                                                                                                  36 base pairs
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                                                                                                                                                                                                                                                                                                                                                    UMBER: US/08/440,391
12-MAY-1995
                                                            100.0%;
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Pred. No. 5.7e-08;
                                                            Score 80; 1
Pred. No. 7
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                                                Mismatches
                                                              .6e-08;
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                                                                           Length 36;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-908-597A-14
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US-09-236-385A-14
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                                                                                                                                                                                                                      Sequence 14, Application US/09236385A Patent No. 6221615
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 104322.147
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942.8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/908,597A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, Robert J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE CHARACTERISTICS:
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CITY: Washington
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                                                                                                                                                                     LUTZ, ROI
TITLE OF INVENTION:
COMPUTER READABLE FORM:
                                                                                                             CORRESPONDENCE ADDRESS
                                                                                                                                                                                                        APPLICANT: CHITTENDEN, Thomas D.; and
                                                                                                                             NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                          GOVGROLATIGDDINE 23
                                 CITY: Washington STATE: D.C.
                                                                       ADDRESSEE: Hale and Dorr STREET: 1455 Pennsylvania Avenue, N.W.
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illarity 100.0%;
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                                                                                                                                                   Robert J.

NO.: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14:
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Pred. No. 7.6e-08;
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RESULT 14
PCT-US96-06122-14
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GENERAL INFORMATION:
APPLICANT: INMUNOGEN, INC.
TITLE OF INVENTION: WHICH MODULATE AND COMPOSITIONS
TITLE OF INVENTION: WHICH MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 16; Conserv
                                                                       TELEFAX: 202-942-8484
NFORMATION FOR SEQ ID NO:
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INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
LENGTH: 36 base pairs
                                  SEQUENCE CHARACTERISTICS:
LENGTH: 36 base pairs
                                                                                                                                                                                                                                                                                                                                                                                  ZIP: 20004

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:
                                                                                               TELEPHONE: 202-942-8400
TELEPHONE: 202-942-8484
                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                 PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: D.C. 2004
                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PHILING DATE: HEREWITH
                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STREET: 1455 Peni
CITY: Washington
TOPOLOGY:
                                                                                                                                                                                                                                                  CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
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FILING DATE: 25-Jan-1999
CLASSIFICATION: <UNKNOWN>
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION: SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION: TELEPHONE: 202-942-8400
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                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: amino acid
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1455 Pennsylvania Avenue, N.W.
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US-08-471-058-23
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                                                            Query Match
Best Local Similarity
Matches 16; Conserv
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Best Local Similarity 100.
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                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTMARE: FastSEO for Windows Version 2.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/471,058
FILING DATE: 06-JUN-1995
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: Kiefer, Michael C.
APPLICANT: Barr, Philip J.
                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: 08/320
FILING DATE: 07-0CT-1994
APPLICATION NUMBER: 08/160
FILING DATE: 30-NOV-1993
ATTORNEY/AGENT INFORMATION:
NAME: Lehnhardt, Susan K
REGISTRATION NUMBER: 33,94
REFERENCE/DOCKET NUMBER: 2
                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: /JU
CITY: Palo Alto
STATE: CA
STATE: CA
                                                                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION: TELEPHONE: 415-813-5600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON 6 FOERSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: NOVEL APOPTOSIS MODULATING TITLE OF INVENTION: PROTEINS, DNA ENCODING THE TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                    TELEFAX: 415
                                                                                                                                                                                                                                                          TELEPHONE: 415 -- TELEPHONE: 415-494-0792
                                                                                                                                                                        STRANDEDNESS:
                                                                                                                                                             TOPOLOGY:
                                                                                                                                                                                                          LENGTH:
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                    GQVGRQLAIIGDDINR 16
GQVGRQLAIIGDDINR 17
                                                                                                                                                                                         amino acid
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                                                            100.0%; Score 80; DB 1; ilarity 100.0%; Pred. No. 3.8e-07 Conservative 0; Mismatches 0
                                                                                                                                                             linear
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                                                                                           Length 141;
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Search completed: September 20, 2002, 10:37:21

Job time: 409 sec

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Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.
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Compugen Ltd
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phosphopyruvate hy probable enolase [ hypothetical prote hypothetical prote hypothetical prote probable H+/K+ exc ribose-phosphate p ribose-phosphate p ActP copper transp
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     RESULT 2

$58875

cdn-2 protein - 1

C; Species: Homo:
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C:Date: 15-Feb-1996 #tsequence_revision 01-Mar-1996 #text_change 08-Oct-1999
C:Accession: S:58873; S:58872; S:58874
R:Chittenden, T., Hazrington, E.A.; O'Connor, R.; Flemington, C.; Lutz, R.J.; Evan, Nature 374, 733-736, 1995
A:Title: Induction of apoptosis by the Bc1-2 homologue Bak.
A:Reference number: S:58873
A:Accession: S:58873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
A; Residues: 1-211 <FARPA
A; Residues: 1-211 <FARPA
A; Residues: 1-211 <FARPA
A; Residues: 1-212 <FARPA
A; Cross-references: EMBL:X84213; NID:g804984; PIDN:CAA58997.1; PID:g804985
R; Kiefter, M.C.; Brauer, M.J.; Powers, V.C.; Wu, J.J.; Umansky, S.R.; Tomei, L.D.; Bar
Rature 374, 736-739, 1995
A; Title: Modulation of apoptosis by the widely distributed Bcl-2 homologue Bak.
A; Reference number: S58874; MUID:95231654
A; Reference S58874; MUID:95231654
A; Reference S58874
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S58873
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                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: mRNA
A;Residues: 1-211 <KIED:
A;Cross-references: EMBL:016811; NID:9595923; PIDN:AAA74466.1; PID:9595924
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bak protein - human
N;Alternate names: bcl-2 homolog; cdn-1 protein
                                                                                                                                                                                                                                                                                                                                                A;Gene: GDB:BAK
A;Cross-references: GDB:635887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Status: preliminary
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      preliminary; nucleic acid sequence not shown
                                                                                                                                                                                                                                 16; Conservative
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T1467
T13091
C72291
C72292
A72244
H97244
H97244
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H97247
C72379
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Pred. No. 3.2e-06;
; Mismatches 0;
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ABC transport prot
probable methyl-ac
methyl-accepting c
methyl-accepting c
methyl-accepting c
twitching motility
topoisomerase IV,
copper-transportin
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Result No.

Score

Query Match

Length DB

IJ S58873

AE0564 C64779 A90696 E85546 H82104

222 223 224 227 227 227 227 227 227 227 227

B71213 C826152 C826168 E70041 H84643 JQ1185 T03267 T03267 T03267 T046031 D96633 D96633 D96633 D96633 D96633

Gaps

0

43 43

100 0 58.11 57.55 57.55 57.55 57.55 58.25

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 s

summaries

Database

4 3 2 1 PIR\_71:\*
1: pir1:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* Minimum DB Maximum DB

seq length: 0 seq length: 2000000000

Total number

Title: Perfect score:

US-09-544-664-30 80

GOVGRQLAIIGDDINR 15

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

OM protein - protein search, using sw model

GenCore version Copyright (c) 1993 - 2000

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H/K*-exchanging ATPase (EC 3.6.1.36) - Salmonella enterica subsp. enterica serovar Typh C:Species: Salmonella enterica subsp. enterica serovar Typhi A:Note: this species has also been called Salmonella typhi A:Note: this species has also been called Salmonella typhi C:Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 27-Nov-2001 C:Accession: AE0564
R;Parkhill, J: Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Churcher, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, J.; Churcher, S.; Moulerton, P.; Cronin, A.; Davis, P.; Davies, R.M.; Dowd, L.; White, N.; Farrar, S.; Moule, S.; O'Gaora, P.
Nature 413, 848-852, 2001
A:Authors: Parry, C.; Quall, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; A.; Authors: parry, C.; Quall, M.; Rutherford, R.; Simmonds M.; Skelton, J.; Stevens, K.; A.; Title: Complete genome sequence of a multiple drug resistant Salmonella enterica serov A; Accession: AE0564
A. Accession: AE0564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Date: 15-Peb-1996 #sequence_revision 01-Mar-1996 #text_change 21-Jul-2000 C;Accession: S58875
R;Klefer, M.C.; Brauer, M.J.; Powers, V.C.; Wu, J.J.; Umansky, S.R.; Tomei, L.D.; Nature 374, 736-739, 1955
A;Title: Modulation of apoptosis by the widely distributed Bcl-2 homologue Bak. A;Reference number: S58874; MVID:95231654
A;Accession: S58875
A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Nolecule type: DNA
A;Residues: 1-211 <KIED
A;Cross-references: EMBL:U16812; NID:9595925; PIDN:AAA74467.1; PID:9595926
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, November 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C:Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change in C:Accession: 706308
R:Bevan, M: Terryn, N.; Ardiles, W.; Buysshaert, C.; Dasseville, swes, H.W.; Mayer, K.F.X.; Schueller, C. submitted to the Protein Sequence Database, April 1999
A:Reference number: 215589
A:Accession: 706308
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A:Introne: 39/3: 61/1: 97/2: 148/3: 190/3: 232/1: 257/3: 275/2: C:Superfamily: human phosphoprotein phosphatase 1A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: DNA
A;Residues: 1-357 <BEV>
A;Cross-references: EMBL:AL049607; GSPDB:GN00062; ATSP:F11C18.
A;Experimental source: cultivar Columbia; BAC clone F11C18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein phosphatase 2C homolog F11C18.60 - Arabidopsis thaliana (;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 15-Jun-2001 C;Date: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 15-Jun-2001 C;Accession: T06308
A;Cross-references: GB:AL513382; PIDN:CAD04983.1; PID:g16501768; GSPDB:GN00176
                               A; Molecule type: DNA
A; Residues: 1-833 < PAR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             B
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16; Conservative
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Pred. No. 3.2e-06;
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Pred. No. 3.
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A; Gene: ybar
C; Superfamily: Bacillus probable copper-transporting ATPase yvgx; ATPase nucle
C; Superfamily: Bacillus probable copper-transporting ATPase pyrgx; ATPase nucle
C; Keywords: ATP; copper binding; bydrolase; ion transport; metal binding; pho:
E; 9-38/Domain: heavy-metal-associated homology < HMA1>
E; 105-134/Domain: heavy-metal-associated homology < HMA2>
E; 105-134/Domain: heavy-metal-associated homology < HMA2>
E; 105-134/Domain: transmembrane #status predicted < TM2>
E; 218-234/Domain: ATPase transduction domain homology < ATT>
E; 248-258/Domain: ATPase transmembrane #status predicted < TM3>
E; 438-454/Domain: transmembrane #status predicted < TM4>
E; 631-647/Domain: transmembrane #status predicted < TM5>
E; 643-785/Domain: ATPase nucleotide-binding domain homology < ATN>
E; 806-822/Domain: ATPase nucleotide-binding domain homology < ATN>
E; 108-110,113/Binding site: copper (Met. Cys. Cys. #status predicted
E; 523/Active site: Asp (aspartylphosphate intermediate) #status predicted
R:Hayashi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Hayashi, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. B. 11-22, 2001
A;Title: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7
A;Reference number: A99629; MUID:21156231; PMID:11258796
A;Accession: A90696
A;Status: preliminary
A:Molecule type: DNA
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A;Gene: STY0544
C;Superfamily: Bacillus probable copper-transporting ATPase yvgx; ATPase nucleotide-b
C;Keywords: hydrolase
                                                                                                                                                                                                                                              Cu(I)-translocation P-type ATPase [imported] - Escherichia coli (strain 0157:H7, subs C;Species: Escherichia coli
C;Date: 18-7ul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001
C;Accession: A90696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
A; Residues: 1-834 <BLAT>
A; Residues: 1-834 <BLAT>
A; Cross-references: GB: AE000154; GB: U00096; NID: 91786683; PIDN: AAC73586.1;
A; Experimental source: strain K-12, substrain MG1655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R:Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; E.A.; Rose, D.J.; Mau, B.; Shao, Y. science 277, 1453-1462, 1997
Science 277, 1453-1462, 1997
Science 277, 1453-1462, 1997
A;Title: The complete genome sequence of Escherichia coli K-12. A;Reference number: A64720; MUID:97426617
A;Recession: C64779
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local :
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Best Local Similarity
Matches 8; Conserv
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66.7%;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 46;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       shown;
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                                                                                                                                                                                      M.; Shinagawa, H.
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functional characterization

PID:g231

glycolysis; hydro-lyase; magnesium
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A;Residues: 1-834 <HAY>
A;Cross-references: GB:BA000007; PIDN:BAB33960.1; PID:g13359994; GSPDB:GN00154
A;Experimental source: strain o157:H7, substrain RIMD 0509952
C:Genetics:
C:Genetics:
A;Gene: ECs0537
C;Superfamily: Bacillus probable copper-transporting ATPase yvgX; ATPase nucleo
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Best Local Similarity
Whiches 8; Conserve
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A;Residues: 1-834 <STO>
A;Cross-references: GB:AE005174; NID:g12513357; PIDN:AAG54833.1;
A;Experimental source: strain O157:H7, substrain EDL933
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Genome sequence of enterohemorrhagic Escherichia coli 0157:H7 A;Reference number: A85480; MUID:21074935; PMID:11206551 A;Accession: E85546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, iller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, E.; Nature 409, 529-533, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Species: Escherichia coli
C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14-Sep-2001
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                                                                                                                               A; Experimental C; Genetics:
                                                                                                                                                                                                                                                           R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dod chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragoi, I.; 1, R.R.; McKalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio chole A;Reference number: A82035; MUID:20406833
A;Accession: H82104
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H82104
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                                                                                                                                                  A;Molecule type: DNA
A;Residues: 1-915 <HEI>
A;Cross-references: GB:AE004293;
A;Experimental source: serogroup
                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Vibrio cholerae
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
C;Accession: H82104
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                                                                                                        A; Gene: VC2215
                                                                                                                                                                                                                                          A:Status: preliminary
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Best Local
                                                               Superfamily: Bacillus
                                                                                     Map position:
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nes 8; Conservative
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66.7%;
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66.7%;
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Pred.
                                                                                                                                                     GB:AE003852; NID:g9656766; O1; strain N16961; biotype
                                                               copper-transporting ATPase yvgX;
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Pred. No. 11;
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11;
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                                                                                                                                                       PIDN:AAF95359.1;
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Potamousis,
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I.; Sellers,
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A;Recession: $44824
A;Status: prolification: $4.000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Helicobacter pylori
C:Date: 29-Nov-1995 #sequence_revision 17-Sep-1997 #text_change 22-Jun-1999
C;Accession: B64539; S58684
C;Accession: B64539; S58684
R;Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McK son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey Nature 388, 539-547, 1997
Nature 388, 539-547, 1997
A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467
A;Accession: B64539
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C;Date: 14-Sep-1994 #sequence_revision 12-May-1995 #text_change 23-Mar-2001
C;Accession: S44824
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A;Molecule type: DNA
A;Residues: 1-1226 <AND>
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A; Description: catalyzes the reve
A; Pathway: glycolysis
C; Superfamily: enolase
C; Keywords: carbon oxygen lyase;
F; 42/Binding site: magnesium 2 (S
                                                                                                                                                                                                                                               Mol. Gen. Genet. 248, 563-572, 1995
A;Title: Cloning of the Helicobacter pylori recA gene and A;Reference number: S58683; MUID:96027928
A;Accession: S58684
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                                                                                                                                                                                                                                                                                                            A;Cross-references: GB:AE000536; GB:AE000511; NID:g2313230; PIDN:AAD07219.1; A;Experimental source: strain 26695 R;Schmitt, W.; Odenbreit, S.; Heuermann, D.; Haas, R. mol. Gen. Genet. 248, 563-572, 1995
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                                                                                                                                                                               A;Residues: 1-25,'I',27-68 <SCH>A;Cross-references: EMBL:Z35478
                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-426 < TOM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Status: nucleic acid sequence not shown; translation not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                phosphopyruvate hydratase (EC 4.2.1.11) - Helicobacter pylori (strains
                                                                                                                    C; Function:
                                                                                                                                    A;Gene: HP0154
                                                                                                                                                         C; Genetics:
                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-25,'I'
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Best Local S
Matches 7
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9; Conser
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                                                                                       the reversible dehydration
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53.8%;
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    (Ser) #status pred
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Length 1226;

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enoisse - Helicobacter pylori (strain J99)
C;Species: Helicobacter pylori
A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 22-Jun-1999
C;Accession: H71967
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Doig, P.C.; Smith, Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, O.; Taylor, D.E.; Vovis, G. Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric A;Accession: H71967
A;Accession: H71967
A;Status: preliminary
A;Status: preliminary
                                                     ð
                                                                                                                                                                                                A;Molecule type: DNA
A;Restidues: 1-258 <KAW>
A;Cross-references: GB:AJ248288; GB:AL096836; NID:g5458960; PIDN:CAB50662.1;
A;Experimental source: strain Orsay
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                          sy v-atpase proteolipid PAB1189 - Pyrococcus abyssi (strain Orsay)
C;Species: Pyrococcus abyssi
C;Date: 20-Aug-1999 #sequence_revision 20-Aug-1999 #text_change 20-Aug-1999
C;Accession: H75027
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                                                                                                                                                                                                                                                                                                          A; Reference number: A75001
A; Accession: H75027
                                                                                                                                                                                                                                                                                                                                                          R; anonymous, Genoscope submitted to the EMBL Data Library, July 1999
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C;Superfamily: enolase
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                                                                                                                                                                                   A;Gene:
                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                          A; Description: Pyrococcus abyssi genome sequence:
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                                                                                          Ouery Match
Best Local Similarity
Matches 7; Conserv
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Best Local
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Best Local Similarity 46.2%;
Matches 6; Conservative
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                                                     GQVGRQLAIIGDDINR 16
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6; Conserv
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43.8%;
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                                                                                          Score 44; DB
Pred. No. 6.7;
4; Mismatches
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Pred. No.
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Pred. No. 7.9;
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5.7;
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pilus biogenesis protein xF1953 [imported] - xylella fastidiosa (strain 9a5c)
C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 20-Aug-2000
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A; Residues: 1-593 <KAN>
A; Cross-references: EMBI
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A; Residues: 1-261 <KAW>
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Best Local S
Matches 7
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Best Local
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8; Conser
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A:Cross-references: EMBL:D90904; GB:AB001339; NID:g1652225; PIDN:BAA17266.1; PID:g104; A:Note: the nucleotide sequence was submitted to the EMBL Data Library, June 1996; C:Genetics:
A:Start codon: GTG
C:Superfamily: Escherichia coli ABC transporter mdlA: ATP-binding cassette homology C:Keywords: ATP: nucleotide binding; P-loop: transport protein F:366-560/Domain: ATP-binding cassette homology <ABC>
F:383-390/Region: nucleotide-binding motif A (P-loop)
                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Accession: $75352
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, O, K.; Okumura, S.; Shimpo, S.; Takeuchi, C.; Wada, T.; 1 DNA Res. 3, 109-136, 1996
A;Title: Sequence analysis of the genome of the unicellu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M.; Ohfuku, Y.; Funahashi, T.; Tanaka, T.; Kudoh, Y.; Y
DNA Res. 5, 55-76, 1998
A;Title: Complete sequence and gene organization of the
A;Reference number: A71000; MUID:98344137
A;Accession: B71213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 25-Apr:1997 #sequence_revision 25-Apr:1997 #text_change 02-Feb-2001
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C;Species: Pyrococcus horikoshii
C;Date: 14-Aug-1998 #sequence_revision 14-Aug-1998 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                       A;Reference number: S74322; MUID:97061201
A;Accession: S75352
A;Status: nucleic acid sequence not shown; translation not shown
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Status: preliminary; nucleic acid sequence not shown; translation not shown
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125 GEAGRGFAVVADEIRR 140
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Tanaka, T.; Kudoh, Y.;
Score 44; DB Pred. No. 17; 3; Mismatches
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Pred. No. 6.8;
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Y.; Yamazaki,
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T.; Watanabe, A.;
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J.; Kushida, N.;
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A;Experimental source: strain 9a5c

R;Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Acencio, M.; Alvarenga, R.; Agringson, A.J.G.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer, H. Briones, M.R.S.; Bueno, M.R.P.; Edmargo, A.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer, H. Briones, M.C.; El-Dorry, H.; Faccincani, A.P.; Ferreira, A.J.S.

submitted to GenBank, June 2000

A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.S.; Franca, S.C.; Franco, M.C.; Frobm J.D.; Junqueira, M.L.; Kemper, E.L.; Kitajıma, J.P.; Krieger, J.E.; Kuramae, E.E.; Laigu Chado, M.A.; Madeira, A.M.B.N.; Madeira, H.M.; Martino, C.L.; Marques, M.V.; Martins, E.A.; Martins, E.M.F.; Matsukuma, A.V.; Menck, C.F.M.; Miracca, E.C.; Miyaki, C.Y.; F.G.; Nunes, L.R.; Oliveira, M.A.; de Oliveira, M.C.; de Oliveira, R.C.; Palmieri, D.P. Rodriques, V.; Rosa, A.J. de M.; de Rosa Jr., V.E.; de Sa, R.G.; Santelli, R.V.; Sawasak A;Authors: da Silva, A.C.R.; da Silva, F.R.; da Silva, A.M.; Silva, Jr., W.A.; da Silva, R.G.; Santelli, R.V.; Sawasak A;Authors, Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; A; Reference number: A59328
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Accession: G82618
R;anonymous, The Xylella fastidiosa Consortium of the Organization for Nucleotide Sequent Nature 406, 151-157, 2000
A;Title: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MUID:20365717
A;Reference number: A82515; MUID:20365717
A;Note: for a complete list of authors see reference number A59328 below
A;Accession: G82618
A;Status: preliminary
Search completed: September 20, 2002, 10:39:10 Job time: 482 sec
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A; Residues: 1-693 <SIM>
A; Cross-references: GB: AE004014; GB: AE003849; NID: g9107044; PIDN: AAF84755.1; GSPDB: GN00
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Gene: XF1953
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Contents: annotation
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Best Local Similarity 43.1
Matches 7; Conservative
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550 GEAGRGFAIVADEVQR 565
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43.8%;
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Pred. No. 20;
4; Mismatches 5; Indels
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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seq
            protein search, using sw model
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length: 2000000000
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Gapop 10.0 , Gapext 0.5
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            DB
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ENOI_MAIZE
DYHC_EMENI
DYHC_FUSSO
DYHC_NEUCR
VAF2_DROME
CRB3_CHICK
DCUP_CAUCR
ENO_PYRAB
ENO_THEMA
ENO_VIBCH
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BAK_HUMAN
BAK_MOUSE
ATCU_ECOLI
PAT2_CAEELL
PAT2_CAEELL
PAT2_CAEELL
PAT2_CAEELL
PAT2_CAEELL
PAT2_CAEELL
PAT2_CAEELL
PAT2_BACSU
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ENO_LYCES
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4 mus musculu
5 escherichia
6 caenorhabdi
6 helicobacte
6 bacillus su
4 aphanocapsa
0 lycopersico
5 zea mays (m
1 oryza sativ
9 caenorhabdi
2 rhizobium m
3 rhizobium m
6 treponema p
6 ureponema p
6 mesocricetu
1 clostridium m
7 pseudomonas
8 caulobacter
4 staphylococ
5 pyrocycus
1 zea mays (m
4 emaricella
5 qallus gall
9 caulobacter
1 caucosphila
5 qallus gall
9 caulobacter
thermotoga
vibrio chol
          EMBL; U16812; AAA74467.1; -.
HSSP; Q16611; 1BXL.
InterPro, IPR002475; BCL2_family.
InterPro, IPR000712; BCL_2.
Pfam; PF00452; BCL-2; 1.
SMART; SM00337; BCL; 1.
PR0SITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    _HUMAN STANDARD; PRT; 211 AA.

Q13014;
Q13014;
Q1-NOV-1997 (Rel. 35, Created)
Q1-NOV-1997 (Rel. 35, Last sequence update)
Q1-NOV-1997 (Rel. 35, Last sequence update)
Q1-NOV-1997 (Rel. 35, Last sequence update)
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
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Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
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Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
Bc1-2 homologous antagonist/killer 2 (Apoptosis regulator BAK-2).
                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch).
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Bak. ...

Bak. ...

Bak. ...

Bak. ...

Bak. ...

Bature 374:736-739(1995).

BACCELERATES OF AN APPROPRIATE STIMULUS, ACCELERATES PROGRAMED CELL DEATH BY BINDING TO, AND ANYAGONIZING THE A REPRESSOR ECT-2 OR ITS ADENOVIRUS HOMOLOG ELB 19K PROTEIN.

BACT. ...

BACT. EIB 19K PROTEIN. AND BCL-X(L)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE-95231654; PubMed-7715731;
Kiefer M.C., Brauer M.J., Powers V.C., Wu J.J., Umansky S.R.,
Tomei L.D., Barr P.J.;
"Modulation of apoptosis by the widely distributed Bc1-2 homologue"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                          SUBCELLULAR LOCATION: Membrane-associated (Potential).

TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES, WITH
HIGHEST LEVELS IN THE HEART AND SKELETAL MUSCLE.

DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BHK, BAD AND
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 FAMILY (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: CONTAINS 1 BCL-2 FAMILY.
SIMILARITY: CONTAINS 1 BCL-2 FAMILY.
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
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ENOL_HEVBR
ENO_RICCO
ODO2_MYCTU
AT7A_CRIGR
AT7A_ROUSE
AT7A_RAT
AT7A_HUMAN
MBEC_ECOLI
RL15_HALMA
LEUD_SYNYA
ANFD_HELGE
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Q91ej0
P42896
Q10381
P49015
Q64430
Q64430
Q70705
Q04656
P13657
P13657
P12737
P12737
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Result No.

43

332225443 3322265443 3322265443 3323443 3323443 3323443 3323443 3323443

Minimum Maximum

DB DB

Searched:

Database

SPETTER

PROSITE: PS50062: E Apoptosis: Transmen DOMAIN 17 DOMAIN 117 DOMAIN 169

Transmembrane

BCL2\_FAMILY; 1

BH3.
BH1.
BH2.
POTENTIAL.
703875EC4DCCC1D3 CRC64;

MW.

Query Match Best Local & Matches 16

ch 100 l Similarity 100 16; Conservative

.08:

Score 80; Pred. No. Mismatches

DB 1, 3.9e-06; 0;

Length 211;

Indels

0;

Gaps

0;

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RESULT 2
BAK_HUMAN
ID BAKCH
DATA
AC Q1661
DT 01-NO
DT 01-NO
DT 01-NO
DT 01-NO
DT 16-CO
DE BC1-2
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Q16611; Q92533;
Q1-NOV-1997 (Rel. 35, Created)
Q1-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
BC1-2 homologous antagonist/killer (Apoptosis
                                                                                                    EMBO
                                                                                                                          AUTAGENESIS, AND FUNCTION OF BH3 DOMAIN.
MEDLINE-96091131, PUDMed-9521016;
Chittenden T., Flemington C., Houghton A.B., Ebb R.G.,
Elangovan B., Chinnadurai G., Lutz R.J.;
"A conserved domain in Bak, distinct from BH1 and BH2,
death and protein binding functions.";
EMBO J. 14:5589-5596(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BAKI OR BAK.

HOMO Sapiens (Human),

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A. MEDLINE-95231654; Kiefer M.C., Braue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE-95231653: PubMed-7715730;
MEDLINE-95231653: PubMed-7715730;
Chittenden T., Harrington E.A., O'Connor R., Flemington
Evan G.I., Guild B.C.;
"Induction of apoptosis by the Bcl-2 homologue Bak.";
Nature 374:733-736(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-95231652; PubMed-7715729;
Farrow S.N., White J.H.M., Martinou I., Raven T.,
Grinham C.J., Martinou J.C., Brown R.;
"Cinning of a bcl-2 homologue by interaction with
19K.";
                                                                              STRUCTURE BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (JAN-2000) to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nature 374:736-739(1995)
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Squchi H., Hayashi S.;
Submitted (NOV-1996) to the
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of apoptosis by the widely
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the widely distributed Bcl-2 homologue
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(Apoptosis update)

regulator

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RESSUE 3

BAK_MOUSE STANDARD; PRT: 208 AA

AC 008734:
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 01-NOV-1997 (Rel. 41, Last annotation update)
DE Bcl-2 homologous antagonist/killer (Apoptos)
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23: BCL
24: BCL
25: BCL
27: BCL: 1.
27: BCL: 21.
28: PS01000; BH2: 1.
28: PS010208; BH2: 1.
28: PS012208; BH3: PS0122
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DOMAIN
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DOMAIN
TRANSMEM
SEQUENCE
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X(L).

X(L).

SUBCELLULAR LOCATION: Membrane-bound (Potential).

I SUBCELLULAR LOCATION: Membrane-bound (Potential).

I SUBCELLULAR LOCATION: Membrane-bound (Potential).

HIGHSET LEVELS IN THE HEART AND SKELETAL MUSCLE.

DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD AND BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 PAMILY.

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH3).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).

SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDILINE-97172562; PUDMed-9020082;

SALTIET M., Liang H., Netteshelm D., Meadows R.P., Harlan J.E.,

EDEZSTAGI M., YOON H.S., Shiker S.B., Chang B.S., Minn A.J.,

Thompson C.B., Fesik S. W.;

"Structure of Bel-xt-Bak peptide complex: recognition between

regulators of apoptosis.";

Science 275:883-986(1997).

1- FUNCTION: IN THE PRESENCE OF AN APPROPRIATE STIMULUS, ACCELERATES

PROCRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING THE A

REPRESSOR BCL-2 OR ITS ADEMOVIRUS HOMOLOG E1B 19K PROTEIN, AND BCL-

1- SUBUNIT: FORMS HETERODIMERS WITH BCL-2, E1B 19K PROTEIN, AND BCL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseelsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002475; BCL2_family, InterPro; IPR000712; Bcl_2. Pfam; PF00452; Bcl-2; 1. SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                        th 100.0%; smilarity 100.0%; 16; Conservative (
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POTENTIAL;
A2200FE72A46D04E CRC64;
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Pred. No. 3.9
0; Mismatches
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3.9e-06;
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RESULT
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AC Q
DT 0
DT 0
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_ECOLI STANDARD; PRT;
ATCU_ECOLI STANDARD; PRT;
Q59385; P78245;
O1-NOV-1997 (Rel. 35, Created)
O1-NOV-1997 (Rel. 35, Last sequence
                                                                                                                                                                                                                                                                                        Apoptosis;
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                 Pfam; PF00452; BC1-2; 1.

SMART; SM00337; BCL; 1.

PROSITE; PS01080; BH1; 1.

PROSITE; PS01258; BH2; 1.

PROSITE; PS01259; BH3; 1.

PROSITE; PS0062; BCL2_FAMILY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restructed by non-profit institutions as long as its content modified and this statement is not removed. Usage by ancentities requires a license agreement (See http://www.isb-sentities.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Gene structure, cDNA sequence, and expression of murine proapoptotic Bcl-2 family member.";
Genomics 44:195-200(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                             TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR002475; BCL2_family. InterPro; IPR000712; BC1_2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Chittenden T., Ma A., Evan G.I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=97446138; PubMed=9299236;
Ulrich E., Kauffmann-Zeh A., Hueb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-SWISS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                  69 GQVGRQLALIGDDINR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           tities requires a license agreement (S send an email to license@isb-sib.ch).
                                                                                                                                       1 GQVGRQLAIIGDDINR 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTY WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY (BY SIMILARITY). APOPTOTIC MEMBERS OF THE BCL-2 FAMILY (BY SIMILARITY). SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1). SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2). SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3). SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3). SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: FORMS HETERODIMERS WITH BCL-2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: IN THE PRESENCE OF AN APPROPRIATE STIMULUS, ACCELERATES PROGRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING THE A REPRESSOR BCL-2 OR ITS ADENOVIRUS HOMOLOG E1B 19K PROTEIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE SPECIFICITY: WIDELY EXPRESSED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     X(L) (BY SIMILARITY).
SUBCELLULAR LOCATION: Membrane-associated (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                      MGI:1097161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Y13231; CAA73684.1;
Q16611; 1BXL.
                                                                                                                                                                           l Similarity
15; Conser
                                                                                                                                                                                                                                              ; Transmembrane.

71 85

114 133

116 181

185 202

208 AA; 23300 N
                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bak1
                                                                                                                                                                                        97.5%;
                                                                                                                   84
                                                                                                                                                                                                                                                 MW.
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                                                                                                                                                                         1;
                                                                                                                                                                                                                                           BH2.
POTENTIAL.
, DAFC11B160C523C9 CRC64;
                                                                                                                                                                                                      Score 78;
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                                                                                                                                                                                        Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                           Mismatches
                                                                                                                                                                                        NO.
   update)
                                              834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                        œ
                                                                                                                                                                                                    DB 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E1B 19K PROTEIN,
                                                                                                                                                                                                    Length 208;
                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  restrictions
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INTERACTION
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Ecogene; Ec13246; ybaR.
InterPro; IPR001757; E1-E2_ATPase.
InterPro; IPR001934; HMA.
InterPro; IPR001454; Hydrolase.
Pfam; PF00122; E1-E2_ATPase; 1.
Pfam; PF00403; HMA; 2.
Pfam; PF00403; HMA; 2.
Pfam; PF00702; Hydrolase; 1.
                       TRANSMEM TRANSMEM
                                                                                     TRANSMEM
TRANSMEM
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                                                                                                                                                                                                                                                                                                                                       EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Roberts D., Allen E., Araujo R., Aparicio A., Chung E., Davis Duncan M., Federspiel N., Hyman R., Kalman S., Komp C., Kurdi Lew H., Lin D., Namath A., Oefner P., Schramm S., Davis R.W.; Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: INVOLVED IN COPPER TRANSPORT.
-!- CATALYTIC ACTIVITY: ATP + H(2)O = ADP + ORTHOPHOSPHATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Pern
Riley M., Collado-Vides J., Glasner J.D., Rode C
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden
DOMAIN
DOMAIN
                                                                                                                                                                                           PRINTS; PRO0119; CATATPASE.
PROSITE; PS00154; ATPASE_E1_E2;
PROSITE; PS01047; HMA_1; 1.
PROSITE; PS50846; HMA_2; 2.
                                                                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long modified and this statement is not removed.
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STRAIN=K12 / MG16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAR-2002 (Rel. 41, Last annotation update)
Probable copper-transporting ATPase (EC 3.6.3.4).
                                                                                                                                                       TRANSMEM
                                                                                                                                                                                Hydrolase;
                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                               EMBL;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Science
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mau B., Shao Y.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Das S., Chuang E., Vulpe
Submitted (JUN-1996) to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-K12;
Das S., Chuang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Escherichia
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                                                  TRANSMEM
                                                              TRANSMEM
                                                                            TRANSMEM
                                                                                                                                           TRANSMEM
                                                                                                                                                                  Metal-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBCELLULAR LOCATION: Integral membrane protein (Potential). SIMILARITY: BELONGS TO THE CATION TRANSPORT ATPASES FAMILY (E1-E2 ATPASES). SUBFAMILY IB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  complete genome sequence of Escherichia coli K-12.";
nce 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                          P04129;
                                                                                                                                                                                                                                                                                                                                                   U82664;
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                                                                                                                                                                              Transmembrane; Phosphorylation;
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Allen E.,
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187
218
218
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7733
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                                                                                                                                                                                                                                                                                                                                                     AAB40238.1;
                                                                                                                                                                  Repeat;
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                                                                                                                                                                   Complete
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the EMBL/GenBank/DDBJ database
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gamma subdivision; Enterobacteriaceae;
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                       POTENTIAL.
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POTENTIAL.
POTENTIAL.
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., Rode C.K., Mayhew
, Goeden M.A., Rose I
                                                                                                                                                                              ATP-binding; Copper;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     databases
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Best Local
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PIR; S44824; S44824.
HSSP; P11215; 1A8X.
WormPep; F54F2.1; CE00194.
InterPro; IPR000413; Integrin_alpha.
Pfam; PF01839; FG-GAP; 5.
Pfam; PF00357; Integrin_A; 1.
PRINTS; PR01185; INTEGRINA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PAT2_CAEEL
P34446;
01-FEB-1994
01-FEB-1994
01-MAR-2002
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CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                          Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Bonfield J., Burton J., Connell M., Copsey T., Cooper J., Coulson A
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hiller L., Jier M.,
Johnston L., Jones M., Kershaw J., Kirsten J., Laisster N.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Latreille P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Farsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen I
Sims M., Smaldon N., Smith A., Smith M., Sonnhammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterston R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CAEEL
                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN-BRISTOL N2;
MEDLINE-94150718; PubMed-7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Integrin alpha pat-2
PAT-2 OR F54F2.1.
                                                                                                                                                        use by non-profit institutions as long modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                   "2.2 Mb of contiguous nucleotide sequence from chromosome
elegans.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
                                                                                                    EMBL; L23645;
                                                                                                                                  or send an
                                                                                                                                                                                                                                                                                                                                       Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                 Wohldman P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-6239;
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                                                                                                                                                                                                                                             FUNCTION: POSSIBLE ROLE IN CELL-CELL INTERACTION SUBUNIT: HETERODIMER OF AN ALPHA AND A BETA SUBU ASSOCIATES WITH BETA FAP-3.
SUBCELLULAR LOCATION: TYPE I membrane protein (B SIMILARITY: BELONGS TO THE INTEGRIN ALPHA CHAIN SIMILARITY: CONTAINS 7 FG-GAP REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GRQVAMVGDGIN
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8; Conser
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576
834
                                                                                                                                email to license@isb-sib.ch).
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(Rel.
(Rel.
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28, Last sequence up
41, Last annotation
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576
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EALEDDAKRRERQUETAVAT ->

KRIKMTINAASASKKPPSLA (IN REF. 1

A -> R (IN REF. 1).

Q -> R (IN REF. 1).

GF84A18FE208E6F6 CRC64;
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COPPER (POTENTIAL).
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                                                                                                                                                                                                                                                                 protein (By similarity).
LPHA CHAIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1;
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                                                                                                                                               http://www.isb-sib
                                                                                                                                                              Usage
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                                                                                                                                                                                                                                                                                                           ALPHA
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ALPHA PAT-2
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Best Local S
Matches 7
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SIGNAL 1
CHAIN 26
DOMAIN 26
TRANSMEM 1155
DOMAIN 1178
                                                                                                                                                                                                                                                                                                                                                Enolase (EC 4.2 glycerate hydro ENO OR JHP0142.
                                                                                                                                                                                                                                                                                                                                                                                    16-OCT-2001
16-OCT-2001
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                       ENO_HELPJ
Q9ZMS6;
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SEQUENCE
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CARBOHYD
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CARBOHYD
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REPEAT
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REPEAT
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                                                                                                                                         gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
-i- CATALYTIC ACTIVITY: 2-phospho-D-glycerate - phosphoenolpyruvate
                                                                                                                                                                                                          MEDLINE=99120557; PubMed=9923682;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doi Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G., Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G., Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
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          This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it
                                                                  -1- PATHWAY: GLYCOLYSIS.
-1- SUBUNIT: HOMODINER (BY SIMILARITY).
-1- SUBCELLULAR LOCATION: Cytoplasmic (
                                                                                                                                                                                                                                                                                                                         Helicobacter pylori J99 (Campylobacter pylori J99)
Bacteria; Proteobacteria; epsilon subdivision; Hel
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                                                                                                                                                                                                                                                                                                             Helicobacter
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                                                                                                         COFACTOR: MAGNESIUM IS REQUIRED THE DIMER (BY SIMILARITY).
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                                                                                                                                                                                    sequence comparison of
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(Rel. 40, Last sequence update)
(Rel. 40, Last annotation updat
4.2.1.11) (2-phosphoglycerate d
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                                                                                                                                                                      e comparison of two unrelated Helicobacter pylori.";
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53.8%;
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FG-GAP 1.
FG-GAP 3.
FG-GAP 4.
FG-GAP 4.
FG-GAP 5.
FG-GAP 6.
FG-GAP 7.
N-LINKED (GLCNAC. . . ) (POTENTIAL).
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INTEGRIN ALPHA I
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Mismatches
                                                           ENOLASE
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                                                                        (By similarity).
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                                                            FAMILY.
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(POTENTIAL).
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Best Local
                                                                                      Thompson S.A., Blaser M.J.;
Thompson S.A., Blaser M.J.;
"Isolation of the Helicobacter pylori recA
the recA region in resistance to low pH.";
Infect. Immun. 63:2185-2193(1995).
                                                                                                                                                                                                                                                          STRAIN-26695 / ATCC 700392;

STRAIN-26695 / ATCC 700392;

Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.,

Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Dougherty B.A.,

Reisschmann R.D., Ketchum K.A., Klenk H.-P., Gill S., Dougherty B.A.,

Nelson K., Quackenbush J., Zhou L., Kirkness E.F., Peterson S.,

Loftus B., Richardson D., Dodson R., Khalak H.G., Glodek A.,

MCKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey E.K.,

Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D., Kelley J.M.,

Cotton M.D., Weidman J.M., Fujii C., Bowman C., Watthey L., Wallin E.

Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENO_HELPY P48285;
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1996 (Rel. 33, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Enolase (EC 4.2.1.11) (2-phosphoglycerate dehydratase) (2-phospho-D-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Lyase; G
                                                                                                                                                     SEQUENCE OF 1-178 FROM N.A.
STRAIN-ATCC 53726 / 84-183;
MEDLINE-95286262; PubMed-7768597;
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Bacteria; Proteobacteria; epsilon subdivision;
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                                                                                                                                                                                                            Nature 388:539-547(1997).
                                                                                                                                                                                                                                     "The complete genome sequence of the
                                                                                                                                                                                                                                                       Venter J.C
                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=210;
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mes 6; Conserv
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COFACTOR: MAGNESIUM IS REQUIRED FO
THE DIMER (BY SIMILARITY).
PATHWAY: GLYCOLYSIS.
SUBUNIT: HOMODIMER (BY SIMILARITY)
SUBCELLULAR LOCATION: Cytoplasmic
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                                                                                   CATALYTIC ACTIVITY:
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FE 155
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426 AA;
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155
BY SIMILARITY.
242
MAGNESIUM (BY SIMILARITY).
286
MAGNESIUM (BY SIMILARITY).
313
MAGNESIUM (BY SIMILARITY).
46654 MW; EDFA73EA8EB77BEE CRC64;
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46.2%;
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  (By similarity)
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                                                        CATALYSIS
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Best Local S
Matches 6
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30-MAY-2000
30-MAY-2000
01-MAR-2002
                                                                                                              CONFLICT
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ACT_SITE
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EMBL; 299121; CAB15355.1; HSSP; P04129; 1AFJ.
                               entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                    the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for commodified and this statement is not removed.
                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
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Bacillus/Staphylococcus
                                                                                                                                                                                                                                                                                 Bacillus subtilis
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PROSITE; PS00164; ENOLASE; 1.
Lyase; Glycolysis; Magnesium;
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                                                                                                                                                                                                                 STRAIN-168;
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242
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us group; Bacillus.
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Best Local
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P21134;
01-MAY-1991
01-MAY-1991
01-MAR-2002
SEQUENCE FROM N.A.

STRAIN-PCC 6714;

MEDLINE-90382685; PubMed-2119326;

Schmidt A., Sandmann G.;

"Cloning and nucleotide sequence of the crtI gene encoding phytoene dehydrogenase from the cyanobacterium Aphanocapsa PCC6714.";

Gene 91:113-117(1990).
                                                                                                                     Phytoene dehydrogenase CRTI.
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TRANSMEM
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Bacteria; Cyanobacteria;
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PRINTS; PR00943; CUATPASE.
PRINTS; PR00945; CUATPASEI.
PRINTS; PR00946; HGSCAVENGER.
PROSITE; PS00154; ATPASE_E1_E2;
                                                                                     NCBI_TaxID=1120;
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TRANSMEM
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InterPro; IPR001934; HMA.
InterPro; IPR001454; Hydrolase.
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InterPro; IPR001877; Cu_ATPase_I.
InterPro; IPR001757; E1-E2_ATPase.
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8; Conserv
                                                                                                                       (Rel. 18, Created)
(Rel. 18, Last sequence update)
(Rel. 41, Last annotation update)
hydrogenase (EC 1.14.99-.-) (Phytoene desaturase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG14106; yvgx.
TPR001366; Cad_ATPase.
                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ransmembrane;
                                                                                                                                                                                                                                                                                                                        ă,
                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Copper;
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                                                                                                                                                                                                                                                                                 55.0%;
                                                                                                                                                                                                                                                                                                                        86024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hydrolase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Repeat;
                                                                                             Chroococcales; Aphanocapsa
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Phosphorylation; Magnesium; ATP-binding;
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                                                                                                                                                                                                                                                                                                                                                            HMA 2.
COPPER
COPPER
COPPER
COPPER
                                                                                                                                                                                                                                                                                Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                     MAGNESIUM (BY SIMILARITY)
MAGNESIUM (BY SIMILARITY)
; D9C8DA5D40326C6B CRC64;
                                                                                                                                                                                                                                                                                                                            COPPER (POTENTIAL).
COPPER (POTENTIAL).
COPPER (POTENTIAL).
PHOSPHORYLATION (BY SIMILARITY).
MAGNESIUM (BY SIMILARITY).
MAGNESIUM (BY SIMILARITY).
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                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                     ore 44; DB
ed. No. 13;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                         (POTENTIAL).
                                                                                                                                                                              532
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                                                                                                                                                                                                                                                                                         1;
                                                                                                                                                                                                                                                                                        Length 803;
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RESULT 10
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Best Local
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                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                     "Plant enolase: gene structure, expression, Plant Cell 3:719-735(1991).
-i- CATALYTIC ACTIVITY: 2-phospho-D-glycerat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-1992 (Rel. 22, Created)
01-MAY-1992 (Rel. 22, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
Enolase (EC 4.2.1.11) (2-phosphoglycerate dehydratase) (2-phospho-D-
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
STRAIN-CV. SUPERSONIC;
MEDLINE-93044507; PubMed-1841726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Lycopersicon esculentum (Tomato).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;

Astoridae; euasterids I; Solanales; Solanaceae; Solanum.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      van der Straeten D., Rodrigues-Pousada R.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glycerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P26300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENO_LYCES
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                                                                                                                                                                                                                                                                                                                                          van Montagu M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=4081;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Carotenoid biosynthesis; Oxidoreductase; FAD; Flavoprotein; NP_BIND 22 49 FAD (ADP PART) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M55647; AAA62573.1; -. PIR; JN0084; JN0084.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               141 GQTGRRLQLLEFIGEDVHR 159
                                                                                                                                                                                                                                            THE DIMER
                                                                                                                                                                      THE DIMER (BY SIMILARITY).

PATHWAY: GLYCOLYSIS.

SUBUNIT: HOMODIMER (BY SIMILARITY).

SUBCELLULAR LOCATION: Cytoplasmic.

SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GQVGRQLAI---IGDDINR
                                                                                                                                                                                                                                                                            H(2)0.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FUNCTION: THIS ENZYME CONVERTS PHYTOENE INTO ZETA-CAROTENE VIA INTERMEDIARY OF PHYTOFLIENE BY THE SYMMETRICAL INTRODUCTION OF DOUBLE BONDS AT THE C-11 AND C-11', POSITIONS OF PHYTOENE. COFACTOR: NAD, NADP, OR FAD (PROBABLE).

PATHWAY: CAROTENOID BIOSYNTHESIS.

SIMILARITY: BELONGS TO THE PHYTOENE DEHYDROGENASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
9; Consert
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hydro-lyase).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             532 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                      MAGNESIUM IS REQUIRED FOR CATALYSIS AND FOR STABILIZING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
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                                                                                                                                                                                                                                                                                       2-phospho-D-glycerate -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
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                                                                                                                                                                                                                                                                                                                       evolution.";
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EMBL;

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Best Local
                                                                                                                                 MaizeDB; 30060;
Mendel; 16623; z
                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a cobetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entitles requires a license agreement (See http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-CV. B73; TISSUL-NUU.; STRAIN-CV. B73; TISSUL-NUU.; MEDLINE-99063764; PubMed-9847102; McLee C., Sachs M.M.; of enol?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         P42895;
01-NOV-1995 (Rel.
01-NOV-1995 (Rel.
                     PRINTS; PR00148; ENOLASE
ProDom; PD000902; Enolase
PROSITE; PS00164; ENOLASE
                                                                                        InterPro; IPR000941; End
Pfam; PF00113; enolase;
                                                                                                                                                                                                                                              entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Lal S.K., Lee C., Sachs M.M.;
"Differential regulation of enolase during anaerobiosis Plant Physiol. 118:1285-1293(1998).
-!- CATALYTIC ACTIVITY: 2-phospho-D-glycerate = phosphoe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [1]
SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
TISSUE-Root;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC cl Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
Enolase 2 (EC 4.2.1.11) (2-phosphoglycerate dehydratase
D-glycerate hydro-lyase 2).
                                                                                                                                                                                                        EMBL; U17973;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MAIZE
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SEQUENCE
                                                                                                                                                                                       HSSP; P56252;
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Prodom; PD000902; Enolase; 1.
PROSITE; PS00164; ENOLASE; 1.
Lyase; Glycolysis; Magnesium.
Lyase; Glycolysis; Magnesium.
Lyase; Glycolysis; Magnesium.
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Pfam; PF00113; enolase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
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Mendel; 611; LYCes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        317
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                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Cytoplasmic. SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE DIMER (BY SIMILARITY).
PATHWAY: GLYCOLYSIS.
SUBUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COFACTOR: MAGNESIUM IS REQUIRED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H(2)0
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  Glycolysis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 6; Conserv
                                                                                                                6623; Zeama; Pgh1; 16623.
IPR000941; Enolase.
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300
327
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                                                                                                                                                                                   1PDZ.
                                                                                                                                                                                                           AAD04187.1;
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250
300
327
47798 1
: Enolase; 1.
: ENOLASE; 1.
s; Magnesium;
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MAGNESIUM (BY SIMILA

M; 73C384181ED620AO (
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43;
Pred. No.
Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Liliopsida; Poales; Poaceae; PACC clade;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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GNESIUM (BY SIMILARITY)

GNESIUM (BY SIMILARITY)

GNESIUM (BY SIMILARITY)
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    (2-phospho-

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Best Local S
Matches 6
  METAL
SEQUENCE
                                                                                                                                                                                                                                                    -!- PATHWAY: GLYCOLYSIS.
-!- SUBUNIT: HOMODIMER (BY SIMILARITY).
-!- SUBCELLULAR LOCATION: CYtoplasmic.
-!- DEVELOPMENTAL STAGE: EXPRESSED DURING EARLY EMBRYOGENESIS.
-!- SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                          METAL
                                                                                                                                                                   entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                      This SWISS-PROF entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
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[1]
SEQUENCE FROM N.A.
TAINUNG 67: TISS
TSAO C.-W.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ENO_ORYSA
Q42971;
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METAL
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SEQUENCE
                                                                                                                                   EMBL; U09450; AAC49173.1; -. HSSP; P56252; 1PDZ.
                                                                                                                                                                                           modified and this statement
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Viridiplantae; Streptophyta; En
Spermatophyta; Magnoliophyta; Liliopsida;
Ehrhartoideae; Oryzeae; Oryza.
NCBI_TaxID=4530;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
Enolase (EC 4.2.1.11) (2-phosphoglycerate dehydratase) (2-phospho-D-
                                        METAL
                                               Lyase; Glycolysis; Magnesium.
ACT_SITE 164 164
                                                                          ProDom; PD000902; Enolase; PROSITE; PS00164; ENOLASE;
                                                                                                            Pfam; PF00113; enolase;
                                                                                                                                                                                                                                                                                                                                                             "A rice early embryogenesis-specific enclase cDNA.";
(In) Plant Gene Register PGR95-084.
-i- CATALYTIC ACTIVITY: 2-phospho-D-glycerate = phosphoenolpyruvate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             glycerate hydro-lyase) (OSE1).
Oryza sativa (Rice).
                                                                                                                        InterPro; IPR000941; Enolase
                                                                                                                                                                                                                                                                                                                                          -!- COFACTOR: MAGNESIUM
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                                                                                                PR00148; ENOLASE
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446
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M; DC27708CF92F6850 CRC64;
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Pred.
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                                                                                                                                                                                                                                                                                                                                                                                                               J.-S., Chen Z.-Y.,
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No.
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10;
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a; Poales; Poaceae;
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Score 43; Pred. No. 5; Mismatc

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Length 446

Mismatches

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ATC2_RHIME
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Best Local
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01-NOV-1995 (Rel. 3
01-NOV-1995 (Rel. 3
Hypothetical 84.2 k
                                                                                                                                                                       01-MAR-2002 (Rel. 41, Created)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
Copper-transporting ATPase 2 (EC 3.6.3.4).
ACTP2 OR ATCU2 OR RB1018 OR SMB21578.
Rhizobium meliloti (Sinorhizobium meliloti).
Plasmid pSymB (megaplasmid 2).
Plasmid pSymB (megaplasmid 2).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                           ATC2_RHIME
P58342;
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Eukaryota; Metazoa; Nen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rhabditidae;
                                                    MEDLINE-21396508; PubMed-11481431;
Finan T.M., Weidner S., Worg K., Buh,
Vorhoelter F.J., Hernandez Lucas I.,
Golding B., Puehler A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kershaw
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                                                                                                                          SEQUENCE FROM N.A.
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FUNCTION:
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                                       complete sequence of the 1,683-kb pSymB megaplasmid from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Z48621; CAA88546.1; -.
endosymbiont Sinorhizobium meliloti.";
Natl. Acad. Sci. U.S.A. 98:9889-9894(2001)
NCTION: INVOLVED IN COPPER TRANSPORT (BY S
                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
9; Conserv
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56.2%;
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Last annotation update)
protein R07Bl.9 in chromosome
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                   Buhrmester J., I., Becker A.,
                                                                                                                                                                                                                                                                                                            827
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30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
01-MAR-2002 (Rel. 41, Last annotation update)
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MOD_RES
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- CATALYTIC ACTIVITY: ATP + H(2)O = ADP + ORTHOPHOSPHATE.
-!- SUBCELLULAR LOCATION: Integral membrane protein (By simila-
-!- SIMILARITY: BELONGS TO THE CATION TRANSPORT ATPASES FAMILY (E1-E2 ATPASES), SUBFAMILY IB.
-!- SIMILARITY: CONTAINS 2 HMA DOMAINS.
METAL
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PROSITE; PS01047; HMA_1; 2.
PROSITE; PS50846; HMA_2; 2.
Hydrolase; Transmembrane; Phosphor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or
                                                                                                                                                                                                                                                                                                                           Copper-transporting ACTP
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                                                                                                                                                                                                                                                                                 Rhizobium meliloti (Sinorhizobium meliloti).
Bacteria; Proteobacteria; alpha subdivision; Rhizobiaceae group;
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                                                                                                                                                                         SEQUENCE FROM N.A.
STRAIN-WSM419;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                         NCBI_TaxID=382;
                                                                                                                                                                                                                                                               Rhizobiaceae;
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149
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96
515
714
718
85861
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WW.
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Matches 9; Conserve
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InterPro; IPR000579; Cat_P_ATPaseA.

InterPro; IPR001757; E1-E2_ATPaseA.

InterPro; IPR001757; E1-E2_ATPaseA.

InterPro; IPR001802; HG_scavenger.

InterPro; IPR001802; Hd_scavenger.

InterPro; IPR001802; Hydrolase.

InterPro; IPR001404; Hydrolase.

InterPro; IPR00122; E1-E2_ATPase.

IP fam; PP00122; E1-E2_ATPase; 1.

Pfam; PP00102; HdYdrolase; 1.

PRINTS; PP00940; CATPATPASEA.

IN PRINTS; PR00941; CATPATPASEA.

IN PROSITE; PS00154; ATPASE_E1_E2; 1.

IN PROSITE; PS00154; HMA_1; 2.

IN PROSITE; PS01047; HMA_1; 2.

IN PROSITE; PS01047; HMA_2; 2.

IN PROSITE; PS01046; HMA_2; 2.

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O9mzs6 ovis-pries
O9lwx5 mus musculu
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O9sz53 arabidopsis
O9kp27 vibrio choi
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O9hi6 arabidopsis
P73239 synechocyst
O9f35 arabidopsis
O9f32 xylella fas
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## ALIGNMENTS

Query Match 100.0%; Score 80; DB 6; Length 80 Best Local Similarity 100.0%; Preds. No. 6.3e-06; Matches 16; Conservative 0; Mismatches 0; Indels  Qy 1 (100/GRQLAIIGDDINR 16 1 (111111111111111111111111111111111	O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O77738  O7 O1-NOV-1998 (TERMBLTel. OB. Created)  O7 O1-NOV-1998 (TYEMBLTel.)  O7 O1-NOV-1998 (TYEMBLTEL.)  O7 O1-DEC-2001 (TTEMBLTEL.)  O8 SUS SCTOFA (P19)  O8 SUS SCTOFA (P19)  OC ENKATYOTA; Metazoa; Chordata; Craniata; Vertebrata; Eutelo  OC ENKATYOTA; Metazoa; Chordata; Craniata; Vertebrata; Eutelo  OC MAMMALIA; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.  RN SEQUENCE FROM N.A.  RP SEQUENCE FROM N.A.  RP SEQUENCE FROM N.A.  RT "Expression of apoptosis-associated genes in hibernating; RT mycorafdium of pig.";  TX. Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.  DR HSSP; Q16611; 1BXL.  DR TREAFFO; IPRO00742; BCL2_family.  DR TREAFFO; IPRO007475; BCL2_family.  DR SEQUENCE FROM SECULATION SUMMERS SUMERS SUMERS SUMMERS SUMERS SUMERS SUMERS SUMERS SUMMERS SUMMERS SUMMERS SUMMERS SUMMERS SUMMERS SUMMER
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Best Local Similarity 93,3
Matches 15; Conservative
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"Bak in the Sheep ovary";
Submitted (JUL-1999) to the EMBL/GenBank/DDBJ dal
EMBL; AR164518; AAR99533.1;
HSSP; Ol6611; 1BAL.
InterPro: IPR002475; BCL2_family.
InterPro: IPR002712; BCL2_family.
InterPro: IPR002712; BCL2_family.
Pfam; PF00452; BCL-2; 1.
SMARR; SM00337; BCL: 1.
SMARR; SM00337; BCL: 1.
PROSITE; PS01080; BH1; 1.
PROSITE; PS01080; BH1; 1.
PROSITE; PS01259; BH3; 1.
NOW TEE
                                                                                                                                            SEQUENCE FROM N.A.

STRAIN-NMRI; TISSUF-NEURONAL;

MEDILINE-21238300; PubMed-11278671;

MEDILINE-21238300; PubMed-11278671;

Sun Y. F., Yu L.Y., Saarma M., Timmusk T., Arumae U.;

"Neuron-specific Bel-2 homology 3 domain-only splice variant of Bak is anti-spepictic in neurons, but pro-apoptotic in non-neuronal cells.";

J. Biol. Chem. 276:16240-16247 (2001)

EMBL: AF402617: AAA01876.1:

EMBL: AF402617: AAA01876.1:

EMBL: AF402617: AAA01876.1:

SEQUENCE 151 AA; 16402 MW; 18C13BFF86E4F33B CRC644;
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Q91WX5;
Q1-DEC-2001
Q1-DEC-2001
Q1-DEC-2001
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI_TaxID=10090;
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O1-OCT-2000 (TrEMBLrel. 15, Last sequence update)
O1-OCT-2000 (TrEMBLrel. 19, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
BAK PROTEIN (FRAGMENT).
Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Captinae; Ovis.
NCBI_TaxID=9940;
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l Similarity 93.8%;
lS; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (TrEMBLrel. 19, Created)
(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 19, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
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18039
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X
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Pred. No. 2.1e
1; Mismatches
        Score 78; DB 11;
Pred. No. 2.8e-05;
1; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Mus.
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                                                                    Length 151;
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Best Local S
Matches 15
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OSS253:
O1-MAY-2000 (TrEMBLrel. 13, Created)
O1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PROTEIN PHOSPHATASE 2C-LIKE PROTEIN (AT4G31860/F11C18_60).
F11C18 60 OR AT4G31860
Arabidopsis thallana (Mouse-ear cress).
Enkaryota; Viridiplantae; Streptophyra; Embryophyta; Tracheophyta;
Spermatophyta; Magnodiophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9JK59
Q9JK59;
01-OCT-2000
01-OCT-2000
01-DEC-2001
                                                                                                                                                        SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

Bevan M., Terryn N., Ardiles W., Buysshaert C., Dasseville R.,

De Clerck R., De Keyser A., Neyt P., Rouze P., Van Den Daele H.,

Villaroel R., Gielen J., Van Montagu M., Hoheisel J., Mewes H.W.,

Mayer K.F.X., Schueller C.,

Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases.
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalla; Eutherla; Rodentia;
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BAK PROTEIN
                                                                    Submitted
                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=3702;
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                                                            Arabidopsis sequencing project; mitted (APR-1999) to the EMBL/GenBank/DDBJ
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15; Conservative
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85
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databases

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InterPro; IPR002475; BCL2_family.
InterPro; IPR00712; BCL2_1.
InterPro; IPR007712; BCL2_2.
Pfam; PF00452; BCL2_2.
Pfam; PF00452; BCL2_FAMILY; 1.
PROSITE; PS00052; BCL2_FAMILY; 1.
PROSITE; PS01258; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01258; BH3; 1.
PROSITE; PS01258; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY:
Itoh T., Itoh A., Pleasure D.;
Submitted (APR-2000) to the EMBL/GenBank/DDBJ
EMBL; AF259504; AAF71760.1; -
HSSP; 016611; 1BXL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
Last sequence update)
Last annotation update)
  Score 78; DB 11;
Pred. No. 4e-05;
; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rattus
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                                                                                                                      2493B814B1972421 CRC64;
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  0;
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                                              Length
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Best Local
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Submitted (SEP-2001) to the EMBL/Ge
EMBL; AL049607; CAB40756.1; ...
EMBL; AL161579; CAB79904.1; ...
EMBL; AV057611; AAL14406.1; ...
HSSP; P35813; 1A6Q.
InterPro; IPR000222; PP2C.
InterPro; IPR001932; PP2C_domain.
Pfam; PP00481; PP2C; 2.
SMART; SM00331; PP2C_SIG; 1.
SMART; SM00331; PP2C_SIG; 1.
PROSITE; PS01032; PP2C; 1.
SEQUENCE 357 AA; 39203 MM; 98EE
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01-OCT-2000 (Trem
01-OCT-2000 (Trem
01-DEC-2001 (Trem
CATION TRANSPORT
                                                                                                                                                                                                             SEQUENCE FROM N.A.

STRAIN-EL TOR N16961 / SEROTYPE O1;

MEDLIINE-20406833; PubMed-10952301;

Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwin Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam: Octobron R.J., Nelson K.E., Read T.D., Tettelin H., Richardson Gill S.R., Nelson K.E., Read T.D., You H., Dragoi I., McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., Salzberg S.L., Smith H.O., Colwell R.R., McKalanos J.J., Versear
                                                    Nature 406:477-483(2000).
EMBL; AE004293; AAF95359.1;
HSSP; P04129; 1AFJ.
TIGR; VC2215; .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacteria; Proteobacteria; NCBI_TaxID=666;
                                                                                                                                                           cholerae.
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                                                                                                                                                                                "DNA sequence of both chromosomes
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IPR000579; Cat_P_ATPaseAIPR001757; E1-E2_ATPase.
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15, Last sequence update)
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5, E1-E2 FAMILY.
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Thes 7; Conservative
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Matches 9
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InterPro; IPR001454; Hydrolase.
InterPro; IPR001150; Hypothet_cof.
Pfam; PF00122; E1 = E2 ATPase; 1.
Pfam; PF00403; HMA; 3.
Pfam; PF007702; Hydrolase; 1.
PRINTS; PR00119; CATATPASE.
PRINTS; PR00946; HGSCAVENGER.
PRINTS; PR00946; HGSCAVENGER.
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01-MAY-2000
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SY V-ATPASE
  261AA 1
PH1970
               01-AUG-1998 (TrEMBLrel.
01-AUG-1998 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
261AA LONG HYPOTHETICAL
                                                                                                    057733
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Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.

EMBL: AJ248286; CAB50662.1;
                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE 258 AA;
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SMART; SM00283; MA;
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Archaea; Euryarchaeota;
NCBI_TaxID=29292;
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PROSITE; PS01229; COF_2; UNKNOWN_1.
PROSITE; PS01047; HMA; 1.
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CHEMORECEPTOR PROTEIN.
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01-OCT-2000 (TrEMBLrel. 15,
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pfam; pP00015; MCPsignal; 1.
smART; SM00283; MA; 1.
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NCBI_TaxID=53953;
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Archaea; Euryarchaeota
                              Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M., Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B., Delseny M., Boutry M., Grivell L.A., Mache R., Puigdomenech P., De Simone V., Choisne N., Artiguenave F., Robert C., Brottier P., Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F., Schaefer M., Mueller-Auer S., Gabel C., Fuchs M., Benes V., Wurmbach E., Drzonek H., Erfle H., Jordan N., Bangert S.,
                                                                                                                                                                                                                                                                                                                                                                                             "Structural analysis of A:
Sequence features of the
TAC and BAC clones.";
DNA Res. 7:217-221(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheo;
Spermatophyta; Magnollophyta; eudicotyledons; core eudicots;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                               STRAIN-CV. COLUMBIA;
MEDLINE-21016720; PubMed-11130713;
                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed-10907853;
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Submitted (MAY-2000)
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      Wiedelmann
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7; Conserv
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261 AA;
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      Drzonek H.,
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          Voss
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EMBL/GenBank/DDBJ data
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63.0 KDA PROTEIN).
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          , Jordan N., Holland R.,
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databases.
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             Brandt P.,
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Horikoshi K.,
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fuku Y., 📍
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Conrad A., Ho
Reichelt J.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P73239
P73239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamur Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T., Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Ok Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Synechocystis sp. (strain Bacteria; Cyanobacteria; (NCBI_TaxID=1148;
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01-DEC-2001
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EMBL; AP002040; BAB03118.1;
EMBL; AC069473; AAG51057.1;
                                                                                                                                                                                                                                                                                                                                                                      "Sequence analysis of the genome of the unicellular cyanobacterium synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein-coding regions."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-97061201; PubMed-8905231;
Kaneko T., Sato S., Kotani H., Tanaka
Miyajima N., Hirosawa M., Sugiura M.,
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  ATP-binding; Co
                                                                              Pfam; PF00664; ABC_membrane; Pfam; PF00005; ABC_tran; 1. SMART; SM00382; AAA; 1.
                                                                                                                                                         InterPro; IPR003593; AAA.
InterPro; IPR0031140; ABC_transporter_tmem
InterPro; IPR003439; ABC_transportr.
InterPro; IPR001687; ATP_GTP_A.
InterPro; IPR001687; ATP_GTP_A.
                                                                                                                                                                                                                                                                         EMBL;
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                                                     PROSITE;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GRRLVFVGDSLNR
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  PS00211; ABC_TRANSPORTER; 1. ing; Complete proteome; Trans 593 AA; 65761 MW; DA48CE
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Nordsiek G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nakamura
                                                                                                                                                                                                                                                                                                                                                                                 regions.";
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Q9FG35;
01-MAR-2001
        MEDIINE-20365717; PubMed-10910347;
Simpson A.J.G., Reinach F.C., Arruda P., Abreu F.A., Acencio M.,
Alvarenga R., Alves L.M.C., Araya J.E., Baia G.S., Baptista C.S.,
Alvarenga R., Alves L.M.C., Araya J.E., Bove J.M., Briones M.R.S.,
Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,
Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H.,
Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa-Neto C.M.,
Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El-Dorry H.,
Facincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A.,
Franca J.S., Franco M.C., Frohme M., Furlan L.R.,
Franca J.S., Franco M.C., Frohme M., Furlan J.P.,
Garnier M., Goldman G.H., Goldman M.H.S., Gomes S.L., Gruber A.,
Ho P.L., Hoheisel J.D., Junqueira M.L., Kemper E.L., Kitajima J.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAR-2001 (TrEMBLrel.
01-MAR-2001 (TrEMBLrel.
01-JUN-2001 (TrEMBLrel.
EMB|CAB82953.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Structural analysis of Arabidopsis thaliana chrom submitted (MAY 2000) to the EMBL/GenBank/DDBJ data EMBL; AP002032; BAB098041; ... InterPro; IPR000531; TonB boxC. PROSITE; PS00430; TONB_DEFENDENT_REC_1; UNKNOWN_1. SEQUENCE 608 AA; 67925 MW; 75B5DF42E697586C CF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta;
Spermatophyta; Magnoliophyta; endicotyta
eurosids II; Brassicales; Brassicaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-DEC-2001 (TrEMBLrel. 19,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9PC32
                                                                                                                                                                                                                                                                                               STRAIN-9A5C
                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                     Xylella
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                                                                                                                                                                                                                                                                                                                                                                                                                                                Xylella fastidiosa
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                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=2371;
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7; Conserv
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8; Conserv
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Last sequence update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         eptophyta; Embryophyta; Tracheophyta;
eudicotyledons; core eudicots; Rosidae;
ssicaceae; Arabidopsis.
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                                                                                                                                                                                                                                                                                                                                                                                                                           subdivision; Xanthomonas group;
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59;
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an L....
, Gruber A.,
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PR Thto-TPOT. TEDROLOGO. Chamatania translation.
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Best Local S
Matches 7
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OB1716;
O1-NOV-1998
O1-NOV-1998
O1-DEC-2001
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SEQUENCE
                              Submitted [3]
                                                                                                                                                                                                                                                      Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D., Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V., Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S., Cronin L.A., Shen M., VanAken S.E., Umayam L., Tallon L.J., Gill J.E., Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R., Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A., Salzberg S.L., Fraser C.M., Venter J.C.;
Salzberg S.L., Fraser C.M., Venter J.C.;
"Sequence and analysis of chromosome 2 of the plant Arabidopsis
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InterPro; IPR004090; Me_chemotaxis.
Pfam; PF00015; MCPsignal; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core e
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=20083487; PubMed=10617197;
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                                                                                                                SEQUENCE FROM N.A.
STRAIN-CV. COLUMBIA;
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693 AA;
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                                                         EMBL/GenBank/DDBJ databases
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Pred. No.
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Mismatches
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A Jiang P.X., Lee J.M., Onodera C.S., Quach H.L., Tang C., Toriumi M.,
Yamamura Y., Yu G., Yu S., Bowser L., Carninci P., Chen H., Cheuk R.,
Hayashizaki Y., Ishida J., Jones T., Kamiya A., Karlin-Neumann G.,
Ka Kawai J., Kim C., Koesema E., Lam B., Lin J., Meyers M.C., Miranda M.
Narusaka M., Nguyen M., Palm C.J., Sakurai T., Satou M., Seki M.,
Na Narusaka M., Nguyen M., Palm C.J., Sakurai T., Satou M., Seki M.,
Na Narusaka M., Nguyen M., Palm C.J., Sakurai K., Davis R.W.,
Na Shinn P., Southwick A., Tracy S.E., Shinozaki K., Davis R.W.,
Na Ecker J.R., Theologis A.;
Tracy T., Theologis A.;
Trull Length cDNA of gene F27C12.1/At2g25070 (GI:4559345).";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AC006585; AAD23066 1; -.
PR EMBL; AY050873; AAK92810.1; -.
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                               Pfam; PF01494; FAD_binding_3; 1
Pfam; PF01360; Monooxygenase; 1
PRINTS; PR00419; ADXRDTASE.
PRINTS; PR00368; FADPNR.
PRINTS; PR00469; PNDRDTASEI.
PRINTS; PR00469; PNDRDTASEII.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q98KM2 PRELIMINARY; PRT; 421 AA.
Q98KM2;
Q1-QCT-2001 (TrEMBLrel. 18, Created)
Q1-QCT-2001 (TrEMBLrel. 18, Last sequence update)
Q1-QCT-2001 (TrEMBLrel. 18, Last annotation update)
PROBABLE FAD-DEPENDENT MONOOXYGENASE.
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InterPro: IPRO01932; pp2C_domain.
Pfam; pr00481; pp2C; 2.
SMART; SM00331; pp2Cc; 1.
SMART; SM00331; pp2C_SIG; 1.
PROSITE; pS01032; pp2C; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-21082930; PubMed-11214968;
Kaneko T., Nakamura Y., Sato S., Asamizu E., Kato T., Sasamoto S.,
Watanabe A., Idesawa K., Ishikawa A., Kawashima K., Kimura T.,
Kishida Y., Kiyokawa C., Kohara M., Matsumoto M., Matsuno A.,
Mochizuki Y., Nakayama S., Nakazaki N., Shimpo S., Sugimoto M.,
Takeuchi C., Yamada M., Tabata S.;
"Complete genome structure of the nitrogen-fixing symbiotic bacterium
                                                                                                                                                                                                            InterPro; IPR000205; NAD_bindIng.
InterPro; IPR000103; Pyridine_redox_2.
InterPro; IPR001100; pyr_redox.
InterPro; IPR003042; Rng_mnoxygenase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mesorhizoblum lot1.";
DNA Res. 7:331-338(2000).
EMBL; AP002997; BAB48792.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A. STRAIN-MAFF303099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rhizobium loti (Mesorhizobium loti).
Bacteria; Proteobacteria; alpha subdivision;
Phyllobacteriaceae; Mesorhizobium.
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InterPro; IPR001327; FAD_pyr_redox.
InterPro; IPR000733; flavo_monooxygenase.
InterPro; IPR002938; Moxy_FAD_binding.
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104 GQRGWRELAVLGDKMNK 120
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Pred. No. 4
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Q9CD42;
Q9CD42;
Q1-JUN-2001
Q1-JUN-2001
Q1-DEC-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ol-JUN-2001 (TremBLrel. 17, Created)
Ol-JUN-2001 (TremBLrel. 17, Last sequence update)
Ol-DEC-2001 (TremBLrel. 19, Last annotation update)
ENOLASE (EC 4.2.1.11) (2-PHOSPHOGLYCERATE DEHYDRATASE)
ENO OR ML0255
                                                                                                                                                                                                                                                                                                                                                                                                              MEDILINE-21128732; PubMed-11234002;
Cole S.T., Eiglmeier K., Parkhill J., James K.D., Thomson N.R.,
Wheeler P.R., Honore N., Garnier T., Churcher C., Harris D.,
Mungall K., Basham D., Brown D., Chillingworth T., Connor R.,
Mungall K., Devlin K., Duthoy S., Feltwell T., Fraser A., Hamlin N.
Davies R.M., Devlin K., Duthoy S., Feltwell T., Fraser A., Hamlin N.
Holroyd S., Hornsby T., Jagels K., Lacroix C., Maclean J., Moule S.,
Murphy L., Oliver K., Quail M.A., Rajandream M.A., Rutherford K.M.,
Rutter S., Seeger K., Simson S., Simmonds M., Skelton J., Squares R.,
Squares S., Stevens K., Taylor K., Whitehead S., Woodward J.R.,
Barrell B.G.:
                                                                                                                                                                                                                         EMBL; AL583917; CAC.
HSSP; P00924; 4ENL.
Leproma; ML0255; -.
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                                                                                                                            ProDom; PD000902; Enolase; 1.
PROSITE; PS00164; ENOLASE; 1.
Complete proteome; Glycolysis;
SEQUENCE 447 AA; 47250 MW;
                                                                                                                                                                                                  InterPro; IPR000941; Enolase.
Pfam; PF00113; enolase; 1.
                                                                                                                                                                                                                                                                                                                                                                       "Massive gene decay in the leprosy bacillus.";
Nature 409:1007-1011(2001).
-i- CATALYTIC ACTIVITY: 2-PHOSPHO-D-GLYCERATE =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Actinomycetales;
NCBI_TaxID=1769;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Firmicutes;
                                                                                                                                                                                  PRINTS; PRO0148; ENOLASE.
                                                                                                                                                                                                                                                                    -1- SUBUNIT: HOMODIMER (BY SIMILARITY).
-1- SUBCELLULAR LOCATION: CYTOPLASMIC (BY SIMILARITY).
-1- SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                               -!- COFACTOR: MAGNESIUM IS REQUIRED THE DIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mycobacterium leprae.
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319
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                            VGRQLAIIGDDI
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8; Conser
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                                                        Conservative
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                                                                    53.8%;
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nebacterineae; Mycobacteriaceae; M
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Pred. No.
                                                                      Score 43; DB Pred. No. 63;
                                                                                                                             Lyase; Magnesium 63F03867DAA230B8
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                                                        Mismatches
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Search completed:

September

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Job time: 1663 sec

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     10
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                                                                                                                                                                                                                                                                                                    Score
     protein search, using sw model
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1: /SIDS1/gcgdata/h
2: /SIDS1/gcgdata/h
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length: 2000000000
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Match
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Gapop 10.0 , Gapext 0.5
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81
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Copyright (c) 1993 - 2000 Compugen Ltd.
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/SIDSi/gcgdata/hold-geneseq-geneseqp-embl/AA1981.DAT:*
/SIDSI/gcgdata/hold-geneseq/geneseqp-embl/AA1982.DAT:*
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(without alignments)
7.765 Million cell updates/sec
BAX BH3 consensus
BC12 polypeptide B
Human BAX BH3 doma
Human neurogrotect
Human truncated Ba
Human BAX protein.
Human wild-type Ba
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                                                                                                                                                                                              Bcl2 polypeptide B
Human BAX BH3 doma
GD domain region f
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0.0 192 20 AAV05435  Human 0.0 192 21 AAV87899  A huma 0.0 192 21 AAV6922  AAB74121  AAB778512  AAB74122  AAB74122  AAB74123  AAB74123  AAB74124  AAB74125  AAB74124  AAB74125  AAB74125  AAB74126  AAB74127  AAB74128  AAB74128  AAB74128  AAB74129  AAB74129  AAB74129  AAB74129  AAB770814  AAB74129	1		ļ			ć	`
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100.0 192 20 AAW075435 Hilland 100.0 192 21 AAW078809 A hu 100.0 192 21 AAW70827 Animal 100.0 192 21 AAW70827 Animal 100.0 192 22 AAB741221 Hilland 100.0 192 22 AAB74126 Hilland 100.0 192 22 AAB74126 Hilland 100.0 192 22 AAB74126 Hilland 100.0 192 22 AAB74126 Hilland 100.0 192 22 AAB745129 Hilland 100.0 192 22 AAB75129 Hilland 100.0 192 22 AAB75129 Hilland 100.0 192 22 AAB70539 Hilland 100.0 192 21 AAW708512 Hilland 100.0 192 21 AAW708426 Bax 100.0 221 18 AAW10688 Coddi 100.0 221 18 AAW10684 Bc.12 96.3 16 20 AAW705426 Bc.12 96.3 16 21 AAW70824 Mous 96.3 24 21 AAW70824 Mous 96.3 192 10 AAW70843 Mous 96.3 192 10 AAW70843 Mous 96.3 192 20 AAW07806 Milland 100.0 192 20 AAW07806 Milland 100.0 192 22 AAW807806 Mi	Murine bcl-2 asso	AAB74122	22	192		78	•
100.0 192 20 AAW075435 Hiuma 100.0 192 20 AAW87804 A hu 100.0 192 21 AAW70827 Aug 100.0 192 21 AAW70827 Hiuma 100.0 192 21 AAB749202 Amiin 100.0 192 22 AAB74121 Hiuma 100.0 192 22 AAB74122 Hiuma 100.0 192 22 AAB548286 Hiuma 100.0 192 22 AAB55129 Hiuma 100.0 192 22 AAB55129 Hiuma 100.0 192 22 AAB55129 Hiuma 100.0 192 21 AAB70688 Codi 100.0 197 21 AAW708512 Trur 100.0 221 18 AAW10688 Codi 100.0 221 18 AAW10848 Bax 100.0 331 20 AAW39263 Mious 100.0 331 20 AAW39263 Bclt2 100.0 331 20 AAW370814 Bclt2 100.0 321 AAW70824 Bclt2 100.0 331 20 AAW37007 Mious 100.0 321 AAW70824 Bclt2 100.0 331 20 AAW87805 Muri 100.0 321 AAW87805 Muri		AAY70828	21	192	•	78	_
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100.0 192 20 AAV05435 Hiuma 100.0 192 20 AAW87804 A hu 100.0 192 21 AAV70827 Ah 100.0 192 21 AAV70827 Ah 100.0 192 21 AAV79827 Ah 100.0 192 22 AAB74121 Hiuma 100.0 192 22 AAB74126 Hiuma 100.0 192 22 AAB34121 Hiuma 100.0 192 22 AAB35129 Hiuma 100.0 192 22 AAB35129 Hiuma 100.0 192 22 AAB365339 Hiuma 100.0 192 22 AAB36239 Hiuma 100.0 193 22 AAB36239 Hiuma 100.0 194 22 AAB360539 Hiuma 100.0 195 21 AAV70812 Bax 100.0 217 18 AAV70812 Bax 100.0 331 20 AAV39263 Codil 96.3 16 20 AAV39263 Mous 96.3 16 21 AAB37003 96.3 16 21 AAB37007 Mous 96.3 192 16 AAR71407 Mous 96.3 192 10 AAR75444 Mous	Bc1-2	AAW87805	20	192	•	78	
100.0 192 20 AAV05435 Hiuma 100.0 192 20 AAW87804 A hu 100.0 192 21 AAV70827 Ah 100.0 192 21 AAV70827 Hiuma 100.0 192 21 AAF79202 Am 100.0 192 22 AAF74121 Hiuma 100.0 192 22 AAF54126 Hiuma 100.0 192 22 AAF54126 Hiuma 100.0 192 22 AAF55129 Hiuma 100.0 192 22 AAF55129 Hiuma 100.0 192 22 AAF55129 Hiuma 100.0 192 22 AAF55129 Hiuma 100.0 192 22 AAF55129 Hiuma 100.0 192 21 AAF70618 Bax 100.0 2121 18 AAF70618 Bax 100.0 331 20 AAF705426 Wouss 96.3 16 21 AAF3070824 Wouss 96.3 24 21 AAF37087 Mouss 96.3 78 21 AAF71407 Mouss 96.3 78 21 AAF71407 Mouss 96.3 78 21 AAF71407 Mouss		AAY05434	20	192	•	78	
100.0 192 20 AAV05435 Hilma 100.0 192 20 AAW87804 A hu 100.0 192 20 AAW87809 A hu 100.0 192 21 AAV70827 Hilma 100.0 192 21 AAV79827 Amil 100.0 192 22 AAB74121 Hilma 100.0 192 22 AAB74126 Hilma 100.0 192 22 AAB54126 Hilma 100.0 192 22 AAB55129 Hilma 100.0 192 22 AAB55129 Hilma 100.0 192 22 AAB55129 Hilma 100.0 192 22 AAB5512 The AAM70688 Hilma 100.0 193 22 AAB5512 Hilma 100.0 194 22 AAB5513 Hilma 100.0 195 22 AAB5512 Hilma 100.0 196 22 AAB5512 Hilma 100.0 197 21 AAM70688 Hilma 100.0 198 22 AAB5513 Hilma 100.0 198 22 AAB5513 Hilma 100.0 199 21 BAAW10688 Hilma 100.0 199 21 BAAW10688 Hilma 100.0 331 20 AAV708263 Codi 96.3 16 21 AAB37003 Mous 96.3 16 21 AAB37003 Mous 96.3 27 21 AAB37007 Mous	Murine Bax protei	AAR71407	16	192		78	Ī
100.0 192 20 AAV05435 Hiuma 100.0 192 20 AAW87809 A hu 100.0 192 21 AAV70827 Ani 100.0 192 21 AAV70827 Ani 100.0 192 21 AAV70827 Ani 100.0 192 22 AAB74126 Huma 100.0 192 22 AAB74126 Huma 100.0 192 22 AAB74126 Huma 100.0 192 22 AAB35129 Huma 100.0 192 22 AAB35129 Huma 100.0 192 22 AAB36539 Trun 100.0 193 21 AAV78512 Huma 100.0 194 22 AAB50539 Huma 100.0 195 21 AAV78512 Huma 100.0 197 21 AAV78512 Huma 100.0 197 21 AAV78513 Huma 100.0 197 21 AAV78514 Huma 100.0 197 21 AAV78513 Huma 100.0 197 21 AAV78513 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 18 AAW10688 Huma 100.0 221 AAW106426 Huma 100.0 221 AAW106426 Huma 100.0 221 AAW106426 Huma 100.0 221 AAW106426 Huma 100.0 221 AAW106426 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 193 22 AAB37033 Huma 100.0 221 AAW106426 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma 100.0 192 22 AAB50130 Huma	O	AAY70819	21	78		78	
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100.0 192 20 AAW05435 100.0 192 20 AAW87804 100.0 192 20 AAW87804 100.0 192 20 AAW87809 100.0 192 21 AAY70827 100.0 192 21 AAY70827 100.0 192 21 AAY69202 100.0 192 21 AAY69202 100.0 192 22 AAB74121 100.0 192 22 AAB74121 100.0 192 22 AAB74126 100.0 192 22 AAB74126 100.0 192 22 AAB74129 100.0 192 22 AAB74129 100.0 192 22 AAB74129 100.0 192 22 AAB74129 100.0 192 22 AAB365129 100.0 192 22 AAB365129 100.0 192 22 AAB365139 100.0 192 22 AAB365139 100.0 192 22 AAB365139 100.0 193 22 AAB36539	вах виз	AAY05426	20	16	•	78	
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100.0 192 20 AAV05435 Human BAX protes 100.0 192 20 AAW87804 A human Bcl-2 at 100.0 192 20 AAW87809 A human Bcl-2 at 100.0 192 21 AAV70827 Human BAX aipha 100.0 192 21 AAV70827 Amino acid sequence 100.0 192 21 AAV74121 Human bcl-2 ass 100.0 192 22 AAB74121 Human bcl-2 ass 100.0 192 22 AAB74126 Human bcl-2 ass 100.0 192 22 AAB48286 Human Bax. Hono 100.0 192 22 AAB48286 Hum	Вах	AAB50539	22	192		81	
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100.0 192 20 AAY05435 Human BAX protes 100.0 192 20 AAW87809 A human Bc1-2 at 100.0 192 20 AAW87809 A human Bc1-2 at 100.0 192 21 AAY70827 Human BAX alpha 100.0 192 21 AAY69202 Amino acid sequ 100.0 192 21 AAY69202 Human bc1-2 ass 100.0 192 22 AAB74121 Human bc1-2 ass 100.0 192 22 AAB74126 Human bc1-2 ass	Вах	AAB48286	22	192		81	
100.0 192 20 AAV05435 Human BAX protes 100.0 192 20 AAW87804 A human Bcl-2 a 100.0 192 20 AAW87809 A human Bcl-2 a 100.0 192 20 AAV870827 Human BAX alpha 100.0 192 21 AAV70827 Amino acid sequal 100.0 192 21 AAV74121 Human bcl-2 as 100.0 192 21 AAV74121 Human bcl-2 as 100.0 192 21 AAV74121 Human bcl-2 as 100.0 192 22 AAB74121 Human bcl-2 as 100.0 192 20 AAV874121 Human bcl-2 AAV874121 Human bcl-2 AAV874121 Human bcl-2 AAV874121 Human bcl-2 AAV874121 Human bcl-2 AAV874121 Human bcl-2 AAV8741	bcl-2 assoc	AAB74126	22	192	٠.	81	
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100.0 192 20 AAV05435 Human BAX protein 100.0 192 20 AAW87804 A human Bcl-2 ass 100.0 192 20 AAW87809 A human Bcl-2 ass	BAX alpha	AAY70827	21	192		18	
100.0 192 20 AAY05435 Human BAX protein 100.0 192 20 AAW87804 A human Bcl-2 ass	human Bcl-2 ass	AAW87809	20	192	•	81	
100.0 192 20 AAY05435 Human BAX prote	human Bcl-2 ass	AAW87804	20	192	٠	81	
	BAX prote	54	20	192		81	

## ALIGNMENTS

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RESULT
AAB37032
cardiant; Bol-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal, gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS;
                                                                                                        06-APR-2000; 2000WO-US09352
                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                              stroke; myocardial infarction.
                                                                                                                                                                                                                                                   Cytostatic; neuroprotective;
                                                                                                                                                                                                                                                                       Bcl2 polypeptide BH3 domain peptide #32.
                                                                                                                                                                                                                                                                                             28-FEB-2001 (first entry)
                                                                                                                                                                                                                                                                                                                     AAB37032;
                                                                                                                                                                                                                                                                                                                                       AAB37032 standard; peptide;
                                                                                                                              12-OCT-2000
                                                                                                                                                   WO200059526-A1
                                                                                                                                                                                                                                                                                                                                         16
                                                                                                                                                                                                                                                   anti-HIV; virucide; cerebroprotective;
                                                                                                                                                                                                                                                                                                                                         ⋛
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New peptide conjugates for modulating apoptosis or for inhibiting

WPI; 2000-679325/66

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Wang J, Zhang Z,

Shan

s ľu Ζ; 07-APR-1999;

99US-0128202.

(UYJE-) UNIV JEFFERSON THOMAS.

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AAY05411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide, or a cc the functional group of the side chain is NH2 or OH; or X = O or NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide here CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B37058 represent examples CC of the peptide portion of the conjugate. The peptides represent analogues CC fa BC1-2 superfamily polypeptide corresponding to amino acids 72-97 of CC the BH3 domain of the cell death agonist Bad. The peptide conjugate is useful for modulating apoptosis in the cells of a subject, or for C apoptosis in cancer cells. It is also useful for inhibiting Bc1-2 subject with a cancer characterized by cancer cells that C express Bc1-2. The cancer includes prostate, colorectal, gastric, CC non-small lung, renal or thyroid cancers, neuroblastoma, melanoma, or caute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is also useful for resting disorders, acquired by immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition;
Korsmeyer SJ
                                                                                                               07-OCT-1997;
26-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                   arthritis; autoimmune
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer -
                                                                                                                                                                                                                                                                                                                 WO9916787-A1
                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human BAX BH3 domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAY05411 standard; peptide; 24
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                                                       (UNIW ) UNIV WASHINGTON
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Matches 16; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents a bcl homology domain 3 (BH3 domain) of the invention, derived from a proappototic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting appotosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoinmune diseases, which may result from the down regulation of cell death
and for Bak's cell killing function; and to peptides and/or molecules capable of mimicking its structure and/or function. The present sequence represents a GD domain corresponding to maino acid residues 52-77 of Bax. An antibody raised against a GD domain may be used to screen a CDNA expression library for clones comprising CDNA inserts encoding immunocrossreactive proteins. Truncated GD domain peptides have been shown to maintain the protein binding and cell killing function exhibited by wild type Bak. These molecules may induce apoptosis in
                                                                                                                     The term GD domain refers to a protein domain first identified in Bak and shown to be essential for the interaction of Bak with Bcl-x(L)
                                                                                                                                                                                                             Peptide(s) comprising GD domains - have similar activities to wild type Bak, and cause cellular apoptosis for treatment of viral
                                                                                                                                                                                                                                                                                                    Chittenden TD,
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                                                                                                                                                                   Claim
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Novel polynucleotide encoding a BBC3 protein which is useful for modulating apoptosis, especially in the treatment of cancer and autoimmune diseases -  \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{1}{2} \int_{-\infty}^{\infty} \frac{1}{2} \left( \frac{
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w
                                                                                                1 KKLSECLKRIGDELDS 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fig 4; 47pp; English.
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100.0%; Pred. No.
                                                                                                                                                                                                                                                      100.0%;
     18
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                                                                                                                                                                                                           0,
                                                                                                                                                                                                      Score 81; DB 21;
Pred. No. 1.5e-06;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
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1.5e-06;
                                                                                                                                                                                                                                                                                                 Length 26;
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Query Match Best Local Matches

Local Similarity es 16; Conser

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Mismatches

Score 81; Pred. No.

1.5e-06; DB 22;

Length 26; Indels

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1 KKLSECLKRIGDELDS kklseclkrigdelds

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The present invention describes an isolated or synthetic polypeptide (CI) comprising a less than full length amino acid sequence of a mutant CC Bcl XL/Bcl-2 associated cell death regulator polypeptide (BAD) or its CC fragment, which contains amino acid substitutions at Serl18 of a human CC BAD, Serl55 of a murine BAD (longer murine BAD) or Serl13 of a murine BAD). (I) has immunostimulant, neuroprotective, CC mootropic, antiischaemic, vulnerary, cytostatic, antivital, and cc an be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC polynucleotides can be used for screening candidate compounds and drugs cf for activity that promote cell survival or apoptosis. Other uses include cidentified and (mutant) BAD polypeptides are useful in treating cidenth, reperfusion cell death, wound healing, cancer, viral infections, (Canthamune diseases. The present sequence represents a Bcl-family member CC BH3 domain consensus sequence which is used in an example from the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiviral; antiarthritic; antinflammatory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; reperfusion cell death; arthritis; infertility; lymphoproliferative condition; inflammation; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB70373 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                               New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Ser118, Ser155 or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     02-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                     apoptosis,
Serll3 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2001-138734/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-MAY-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bcl-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BAX BH3 consensus peptide sequence SEQ ID NO:6.
                                                                                                                                                                                                                                                                                                                                                                                              Example 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (APOP-) APOPTOSIS TECHNOLOGY INC
 Sequence
                                     present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             S
                                                                                                                                                                                                                                                                                                                                                                                            Fig 3a; 157pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    e or inhibit
Ser155 or
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RESULT AAB37006
ID AAB37006
ID AAB37006
ID AAB37006
ID AAB3
XX AAB3
XX AAB3
XX AAB3
XX CYto
XX CYto
XX COLO
XX MADO
XX
                                                                                                                                                                                                                                                                                 The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; x = C-0, when the R-X group is attached CC to the functional group of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or x = 0 or NH.

CC side chain of the peptide, where the side chain functional group is COOH CC or COOH2; and R = 2-18C alkyl or alkxy y 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B3705B represent examples of the peptide portion of the conjugate. The peptides represent analogues of the peptide portion of the conjugate. The peptides represent analogues of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC useful for modulating apoptosis in the cells of a subject, or for creversing B ccll lymphoma/leukemia 2 (Bcl-2)-mediated blockage of CC apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 (C apoptosis in cancer chais. It is also useful for inhibiting Bcl-2 (C express Bcl-2. The cancer includes prostate, colorectal, gastric, conjugate is also useful for treating disorders, acquired conjugate is also useful for treating disorders. Acquired conforms (Altrey expressive characterized by Cancer cells that conforms (Altrey expressive characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells characterized by Cancer cells 
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Best Local Similarity
           Matches
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                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 18; Page 17; 74pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2000-679325/66
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bcl2 polypeptide BH3 domain peptide #6
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                                                                                                                                                                                                                                                   immunodeficiency syndrome
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           16;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Wang J,
                                                                                                                                                                                                 27
           Conservative
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100.0%; Score 81; DB 21; 100.0%; Pred. No. 1.6e-06; Live 0; Mismatches 0;
                                                                                                                                                                                                                                                          neurodegenerative disorders, (AIDS), stroke or myocardial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27
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                                                                        Length 27;
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                                                                                                                                                                                           Matches
                                                                                                                                                                                                     Query Match
Best Local
        Human neuroprotective truncated BAX protein, tBAX78
                                 31-JUL-2000
                                                         AAY70818;
                                                                                AAY70818 standard; Protein;
                                                                                                                                                                                                                                                                                   This sequence represents a bcl homology domain 3 (BH3 domain) of the invention, derived from a proapoptotic member of the BCI-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition; arthritis; autoimmune disease; therapy.
                                                                                                                                                                                                                                                                                                                                                                                              Example 10; Fig 17a; 104pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                    Bcl homology domain 3 polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1999-255058/21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-OCT-1997;
26-SEP-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-APR-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  02-JUL-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAY05430 standard; peptide; 34 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (UNIW ) UNIV WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human BAX BH3 domain
                                                                                                                                           ű
                                                                                                                                                                  1 KKLSECLKRIGDELDS 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Φ
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                                                                                                                                           kklseclkrigdelds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KKLSECLKRIGDELDS
                                                                                                                                                                                          l Similarity
16; Conserv
                                                                                                                                                                                                                                                     34
                                (first entry)
                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-0060133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97US-0946039.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98WO-US19765
                                                                                                                                                                                                    100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16
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                                                                                78
                                                                                                                                                                                        0
                                                                                                                                                                                                    Score 81;
Pred. No.
                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                  DB 20;
2e-06;
                                                                                                                                                                                                              Length 34;
                                                                                                                                                                                        Indels
                                                                                                                                                                                       0;
                                                                                                                                                                                       Gaps
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RESULT
AAY34149
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                                                                                                                                                                                                                                                                                             Query Match
Best Local S
Matches 16
                                                                                                                                                                                                                                                                                                                                                                                                      The present sequence is a specifically claimed truncated BAX protein tBAX78 which inhibits neuronal apoptosis induced by trophic factor deprivation. The protein consists of first 78 amino acids of human BAX alpha, that includes the N-terminal region and BH3 domain. It lacks the BH1, BH2 and C-terminal transmembrane domains of the full-length BAX alpha. The tBAX protein lacking only the transmembrane domain has been shown to have anti-apoptotic activity. The present sequence is used to treat diseases associated with neuronal apoptories and the present sequence is used to treat diseases associated with neuronal contents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human; truncated BAX protein; tBAX78; BAX alpha; BCL-2 family; percentive; neuron; anti-apoptotic; cerebroprotective; neuroprotective; neuroprotosis; treatment; neurodegenerative disease; peripheral nerve injury; spinal cord injury; head trauma; stroke.
                       Doma in
                                                          Homo sapiens
                                                                                  Apoptosis;
                                                                                                         Human truncated Bax protein
                                                                                                                                  30-NOV-1999
                                                                                                                                                           AAY34149
                                                                                                                                                                                  AAY34149 standard; Protein; 131 AA.
                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                               apoptosis, e.g. neurodegenerative diseases, peripheral nerve spinal cord injury, head trauma and stroke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Claim 4; Page 33; 43pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Truncated BAX polypeptides useful for preventing apoptosis of neurons for the treatment of nervous system disorders - \,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 22-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         27-APR-2000.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UNIW ) UNIV WASHINGTON
                                                                                                                                                                                                                                               57
                                                                                                                                                                                                                                                                                           Local Similarity 100 nes 16; Conservative
                                                                                                                                                                                                                                                                       ب
                                                                                                                                                                                                          9
                                                                                                                                                                                                                                                             KKLSECLKRIGDELDS 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2000-339513/29
                                                                                                                                                                                                                                               kklseclkrigdelds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EW.
                                                                                  adenovirus; dimeric;
                                                                                                                                                                                                                                                                                                                                                           78 AA;
                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Easton R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0177315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99WO-US24747
          Location/Qualifiers 59..101 /note= "Portion of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note= "N-terminal region of BAX alpha" 59..73
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= BH3_domain
                                                                                                                                                                                                                                                                                                       100.0%;
          "Portion of BH3 domain essential
                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                          Score
Pred.
                                                                                  Bcl-2;
                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                           NO.
                                                                                 p53;
                                                                                                                                                                                                                                                                                             4.8e-06;
hes 0;
                                                                                                                                                                                                                                                                                                                      DB
                                                                                 cancer; gene therapy.
                                                                                                                                                                                                                                                                                                                      21;
                                                                                                                                                                                                                                                                                                                   Length
                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                      78;
         for dimerisation"
                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                              injury,
                                                                                                                                                                                                                                                                                             Gaps
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RESULT 1
AAR71ADA
ID AAR7
XX
AC AAR7
XX
DT 15-N
XX
DT 15-N
XX
DE Huma
XX
KW Huma
XX
KW apop
KW prol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Qy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     $\times CCCCCCCCCCCCCCCCCCCCCCCCCC\times T\times T\tim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Codon, resulting in a truncated protein. However, the domain responsible of or its function is still present in the truncated protein. Bax (Bcl-2 associated x protein) is a proapoptotic member of the Bcl-2 gene family. CC associated x protein is a primary response gene in the Bcl-2 gene family. CC Bax functions as a primary response gene in the p53-regulated apoptotic cC expression of Bax is upregulated at the transcriptional level by p53, and CC Bax mRNA and protein expression have been shown to increase following cC induction of p53. Bax protein can function as a homodimer, or it can the terrodimerise with other Bcl-2 gene family members such as the cc antiapoptotic protein Bcl-2. Heterodimerisation of Bcl-2 family members cC model suggests that the relative amounts of Bcl-2 family members cC model suggests that the relative amounts of Bcl-2 in his in excess, however, Bax homodimers predominate and the cell becomes consceptible to apoptosis following exposure to an apoptotic stimulus. CC additionally, Bax can function in its monomeric form to accelerate cell death. Use of novel adenoviral vectors containing this Bax gene may call cell or pcl adenoviral vectors containing this bax gene may call cell or pcl adenoviral vectors containing this carrying p53 cmutations. In addition, Bax overexpression could provide the apoptotic cell effect of p53 without the need for p53 itself.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents a human truncated Bax protein. The cDNA contains a single base deletion relative to the wild-type (AAX19764), coausing a frameshift which leads to translation of a premature stop causing a frameshift which leads to translation of a premature stop causing a frameshift which leads to the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of the day of 
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Ji L, Roth J
Human; bcl-2; alpha; beta; proto-oncogene; hematopoietic cell line; apoptosis; membrane-associated cytoplasmic protein; B cell; T cell; proliferation; cell cycle progression; Bax; apoptotic cell death; apoptosis; cytokine; death repressor; BHL; BH2; cancer therapy;
                                                                                                                                                                                                            Human Bax protein.
                                                                                                                                                                                                                                                                                                        15-NOV-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New adenovirus vectors, used for killing or inhibiting the growth cells and for treating cancers \cdot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-MAR-1998;
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                                                                                                                                                                                                                                                                                                                                                                                          AAR71406;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAR71406 standard; Protein; 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1999-551404/46.
>B; AAZ19763.
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16; Conserv
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                                                                                                                                                                                                                                                                                                   (first
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                                                                                                                                                                                                                                                                                                   entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 81; DB Pred. No. 8.3 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ą
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bruckheimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 20;
8.3e-06;
thes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sarkiss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ş.
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RESULT 1
AAY34150
ID AAY3
XX
AC AAY3
AC AAY3
AC JO-N
XX
XX
DT JO-N
XX
DE Huma
XX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This sequence represents human Bax protein. Bax is a protein which is C associated with the human bol-2 alpha and betta proteins, the sequences of which are given in AAR7104-05 respectively. bol-2 is encoded by a CC of which are given in AAR7104-05 respectively. bol-2 is a protein many continuous protein and is capable of inhibiting apoptosis in many CC protein protein and is thought to function by enhancing the survival of hematopoietic cells of B and T origins rather than directly promoting CC promote cell cycle progression nor does it necessarily alter the dose CC reponse to limiting concentrations of II-3. bol-2 has been shown to come the protein protein apoptotic cell into this 21 kD protein, Bax. Overexpressed Bax accelerates apoptotic cell ideath induced by cytokine deprivation in an CC II-3 dependent cell into, and it also acts to counter the death repressor cell survival or death following an apoptotic stimulus. The invention G substitution or deletion in the BHI or BH2 domains. This makes the content there is at least one amino acid content therepy, controlling hyperplasias and eliminating self-reactive clones in autoimmunity by favouring death effector molecules. Up or equilating bcl-21s beneficial in treatment and diagnosis of immunocce content the protein substantially incapable of binding bax and/or incapable of deficiency diseases, including AIDS and neurodegenerative and isohaemic confedency diseases, including AIDS and neurodegenerative and isohaemic confedency diseases, including AIDS and neurodegenerative and isohaemic confedency diseases, including AIDS and neurodegenerative.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100
Best Local Similarity 100
Matches 16; Conservative
                                                              Human wild-type Bax protein
                                                                                                                             30-NOV-1999 (first entry)
                                                                                                                                                                                                                                                    AAY34150 standard; Protein; 192 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           regulating bc1-21s by
deficiency diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 3; 133pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Methods for producing and identifying mutant bcl-2 proteins - that lack death repressor activity and/or lacks binding to Bax.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1995-106605/14.
N-PSDB; AAQ97606.
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25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 24-AUG-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         02-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        W09505750-A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            hyperplasia; ;
ischaemic cell
                                                                                                                                                                                                                                                                                                                   11
                                                                                                                                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                                                                      192 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               immunodeficiency disease; AIDS; neurodegeneration; l death.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     93US-0112208
94US-0248819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94WO-US09701.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           including AIDS and neurodegenerative and ischaemic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ç,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 81; DB 16;
Pred. No. 1.2e-05;
); Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 192;
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Human BAX protein sequence

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RESULT 1
DXAXAXB
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                                                                                                                                                                                                                                                                                              CC This sequence represents human wild-type Bax protein. A naturally CC occurring mutant protein (AAX34149) was also isolated. Bax (BCl-2 CASACCIAted x protein) is a proapoptotic member of the Bcl-2 gene family. CC Bax functions as a primary response gene in the p53-regulated apoptotic CC pathway. The Bax gene promoter has 4 p53 binding sites and the CC expression of Bax is upregulated at the transcriptional level by p53, and CC induction of p53. Bax protein can function as a homodimer, or it can beterodimerise with other Bcl-2, heterodimerisation of Bcl-2 family members can heterodimerise with other Bcl-2, heterodimerisation of Bcl-2 family members provides a means of controlling call death via the "rheostat" model. This CC model suggests that the relative amounts of Bcl-2 is in excess, conceptibility of a cell to undergo apoptosis. If Bcl-2 is in excess, so asceptible to apoptosis following exposure to an apoptotic stimulus. CC Additionally, Bax can function in its monomeric form to accelerate cell cath. Use of novel adenoviral vectors containing the Bax gene may CC cell cycle arrest and/or apoptosis in malignant cells carrying p53 cm utations. In addition, Bax overexpression could provide the apoptotic of effect of p53 without the need for p53 itself.
                                                                                                                                                                                                                     Query Match
Best Local S
Matches 16
                            02-JUL-1999
                                                       AAY05435
                                                                                    AAY05435 standard; peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 149-150; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Key
                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New adenovirus vectors, used for killing cells and for treating cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1999-551404/46.
N-PSDB; AAZ19764.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            McDonnell TJ,
Ji L, Roth JA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TEXA ) UNIV TEXAS SYSTEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  11-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-SEP-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9946371-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Domain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Apoptosis; adenovirus; dimeric; Bcl-2; p53; cancer; gene therapy
                                                                                                                                                             57
                                                                                                                  12
                                                                                                                                                                                        1 KKLSECLKRIGDELDS 16
                                                                                                                                                           h 100.0%;
Similarity 100.0%;
16; Conservative 0
                                                                                                                                                                                                                                                                                              192
                           (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  98US-0077541
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Portion of BH3 domain essential for dimerisation"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fang
                                                                                                                                                                                                                      0;
                                                                                                                                                                                                                                    Score 81;
Pred. No.
                                                                                                                                                                                                                      Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bruckheimer EM,
                                                                                                                                                                                                                      . 1.2e-05;
ches 0;
                                                                                                                                                                                                                                                 DB 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     or inhibiting the growth of
                                                                                                                                                                                                                                                Length 192;
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K
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RESULT

AAWAPA

ZD AAWA

XX AAWA

AC AAWA

XX 10-1

XX A hr

XX Humn

KW bcl

XX Home

XX Home

XX Home

XX Home

XX Home

XX Home

XX Y ST Dom
                                                                                                                                                                                                                                                                                                                           Q
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                                                                                                                                                                                                                                                                                                                                                      Query match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents the human BAX protein.
The invention relates to a bcl homology domain 3 (BH3 domain),
derived from a prosportotic member of the BCL-2 family. The
BH3 polypeptide can be used in a method for promoting apoptosis in a
target cell, especially where the cell is a cancer cell a virus infected
cell or an autoantibody producing cell. The BH3 polypeptide can be used
in therapeutic compositions for treating disease including cancer, other
lymphoproliferative conditions, arthritis, inflammation, and autoimmune
diseases, which may result from the down regulation of cell death
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bcl homology domain 3 polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9916787-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition; arthritis; autoimmune disease; therapy.
                                                                                                                               Human; Bcl-2 associated protein; Bax; bcl-2; antibody; modulator; '.'
bcl-2-related function; apoptosis.
                                                                                                                                                                    A human Bcl-2 associated protein designated Bax.
                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 21c; 104pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Korsmeyer SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-OCT-1997;
26-SEP-1997;
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                                                                                                           Homo sapiens
                                                                                                                                                                                             10-MAR-1999
                                                                                                                                                                                                                      AAW87804;
                                                                                                                                                                                                                                             AAW87804 standard; Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UNIW ) UNIV WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-SEP-1998;
            US5856171-A.
                                                Domain
                                                                        Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                            regulation.
                                                                                                                                                                                                                                                                                                         57
                                                                                                                                                                                                                                                                    13
                                                                                                                                                                                                                                                                                                        192
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                             (first entry)
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97US-0060133
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                                                                        Location/Qualifiers 97..118
                                                            /note-
                                                                                                                                                                                                                                                                                                                                                                   100
                                                          "BH1 domain"
                                   "BH2 domain"
                                                                                                                                                                                                                                                                                                                                                      .0%; Score 81; DI
.0%; Pred. No. 1.:
                                                                                                                                                                                                                                              192
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                                                                                                                                                                                                                                                                                                                                                                 DB 20;
1.2e-05;
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                                                                                                                                                                                                                                                                                                                                                                               Length 192;
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RESULT 14
AAW87809
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                  10-NOV-1994;
26-AUG-1993;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-NOV-1994;
26-AUG-1993;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The present sequence represents a human Bcl-2 associated protein designated Bax. The Bax protein is used in a composition which comprises a bcl-2 family member polypeptide, a naturally occurring Bax polypeptide and an antibody that binds to the Bax polypeptide. The composition is used to identify modulators of bcl-2-related function, e.g. substances that inhibit binding of Bax to bcl-2, which would be potentially useful as drugs for modulating
                                                                                                                           10-NOV-1994;
                                                                                                                                                05-JAN-1999.
                                                                                                                                                                                                              Human; Bcl-2 associated protein; Bax; bcl-2; antibody; modulator; bcl-2-related function; apoptosis.
                                                                                                                                                                                                                                            A human Bc1-2 associated protein designated
                                                                                                                                                                                                                                                                                         AAW87809;
                                                                                                                                                                                                                                                                                                               AAW87809 standard; Protein; 192 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 1; Columns 71-74; 105pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA composition encoding bcl-2 two-hybrid and reporter system - for identifying modulators of bcl-2 function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; AAV84005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Korsmeyer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UNIW ) UNIV WASHINGTON.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-NOV-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-JAN-1999
                    WPI; 1999-105119/09
                                         Korsmeyer
                                                                                                                                                                     US5856171-A
                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                   10-MAR-1999
                                                            (UNIW ) UNIV WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                  57 kklseclkrigdelds 72
                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 100 es 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                      1 KKLSECLKRIGDELDS 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1999-105119/09.
                                         SJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                192
                                                                                                                                                                                                                                                                   (first entry)
                                                                                94US-0337646.
93US-0112208.
94US-0248819.
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93US-0112208.
94US-0248819.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ΑA;
                                                                                                                           94US-0337646
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                                                                                                                                                                                                                                                                                                                                                                                                                   Score 81; DB 20;
Pred. No. 1.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                               Bax.
                                                                                                                                                                                                                                                                                                                                                                                                                               Length 192;
                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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DNA composition encoding bcl-2 two-hybrid and reporter system

for

Example 7;

Fig 7; 105pp; English.

identifying modulators of bcl-2 function

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RESULT 1

AAY70827

ID AAY7

XX AAY7

AC AAY7

XX Huma

XX Huma

XX Home

XX Apop

XX Bpin

XX Apop

FT Doma

FT TOM

FT TOM

TTUIT

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Best Local Similarity 100.0%;
Matches 16; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence represents a human Bc1-2 associated protein designated Bax. The Bax protein is used in a composition which comprises a bc1-2 family member polypeptide, a naturally occurring Bax polypeptide and an antibody that binds to the Bax polypeptide. The composition is used to identify modulators of bc1-2-related function, e.g. substances that inhibit binding of Bax to bc1-2, which would be potentially useful as drugs for modulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human: truncated BAX protein: tBAX; BAX alpha; BCL-2 family; head trauma; neuron; anti-apoptotic; cerebroprotective; neuroprotective; neuroactive; apoptosis; treatment; neurodegenerative disease; peripheral nerve injury; spinal cord injury; stroke; pro-apoptotic; PCD; programmed cell death.
                                                                                                                                 WPI;
Disclosure; Page 35-36; 43pp; English
                                                 Truncated BAX polypeptides useful for preventing apoptosis for the treatment of nervous system disorders \cdot
                                                                                                                                                                                   Johnson
                                                                                                                                                                                                                                    (UNIW ) UNIV WASHINGTON
                                                                                                                                                                                                                                                                                     22-OCT-1998;
                                                                                                                                                                                                                                                                                                                                      22-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                             27-APR-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                              WO200023083-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Doma in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Domain
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human BAX alpha protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-JUL-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY70827;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAY70827 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000-339513/29
                                                                                                                                                                                   EX.
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                                                                                                                                                                                Easton
                                                                                                                                                                                                                                                                                     98US-0177315
                                                                                                                                                                                                                                                                                                                                         99WO-US24747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /label-
169..188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label* N-terminal_region
59.73
1/label* BH3_domain
/note* "BCL-2 Homology domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein:
                                                                                                                                                                                   70
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Pred. No. 1.2e-05;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 192;
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                                                                           Query Match
Best Local S
Matches 16
                                                                                                                                                                                                    The present sequence is a human BAX alpha protein, a pro-apoptotic protein which is a member of BCL-2 family of proteins that are involved in regulation of neuronal programmed cell death. The patent discloses specific truncated proteins derived from BAX alpha which inhibit neuronal apoptosis induced by trophic factor deprivation. The anti-apoptotic truncated BAX (tBAX) proteins include tBAX70, tBAX78 and their mutants. These proteins contain the N-terminal region and at least a portion of the BH3 domain of BAX alpha and lack the BH1, BH2 and C-terminal transmembrane domains. The tBAX protein lacking only the transmembrane domain has been shown to have anti-apoptotic activity. The tBAX proteins are used to treat diseases associated with neuronal apoptosis, e.g. neurodegenerative diseases, peripheral nerve injury, spinal cord injury, head trauma and stroke.
                                                                                                                                                                     Sequence
16; Conservative
                                                                                                                                                                     192 AA;
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                                                                         Score 81; DB 21;
Pred. No. 1.2e-05;
); Mismatches 0;
                                                                                                               Length 192;
                                                                             Indels
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                                                                             Gaps
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Search completed: September 20, 2002, 10:35:59 Job time: 427 sec

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Result
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Maximum Match 100%
Listing first 45 summaries
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Perfect score:
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              Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
           protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Issued_Patents_AA:*

1: /cgn2_6/ptodata/2;

2: /cgn2_6/ptodata/2;

3: /cgn2_6/ptodata/2;

4: /cgn2_6/ptodata/2;

5: /cgn2_6/ptodata/2;

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/cgn2_5/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/FGUS_COMB.pep:*
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  US-09-236-385A-40
US-08-440-391-4
US-08-908-597A-6
US-08-908-597A-6
US-08-908-597A-6
US-08-908-597A-24
US-09-236-385A-24
US-09-236-385A-24
PCT-US96-06122-24
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US-08-908-597A-13
US-08-908-597A-13
US-08-978-523-22
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US-08-248-819A-2
US-08-248-819A-2
US-08-337-646A-2
US-08-856-531-9
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## ALIGNMENTS

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RESULT 1
US-09-236-385A-40
US-09-236-385A ; Sequence 40, Application US/09236385A ; Sequence 40, 6221615 ;
PATENT NO. 6221615 ;
GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.;
APPLICANT: CHITTENDEN, Thomas D.;
NOVEL PEPTIDE:
                                                                                                                                                                  JOPOLOGY: Linear MOLECULE TYPE: peptide SEQUENCE DESCRIPTION: SEQ ID NO: US-09-236-385A-40
                                                                        Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 40
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPOUTER: IBM PC COMPATIBLE

OPERATING SYSTEM: PC-POS/MS-DOS

OPERATING SYSTEM: PC-POS/MS-DOS

SOFTWARE: PAtentin Release #1.0, Version #1.25

CURRENT APPLICATION DATA:

APPLICATION DATA:

APPLICATION DATA:

APPLICATION DATA:

OLASSIFICATION:

CLASSIFICATION:

NAME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LUTZ, ROBERT J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
MODULATE APOPTOSIS
                    KKLSECLKRIGDELDS
KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                     TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CITY: Washington
                                                                                                                                                                                                                                                                       LENGTH: 20 amino acids
                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  20004
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100.0%; pr
                                 16
                                                                          Score 81; DB 4;
Pred. No. 4.1e-07;
Nismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and
                                                                                                            Length 20;
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                                                                            Gaps
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08-440-391-6

Application US/08440391

GENERAL INFORMATION: equence 6, Apprage No. 5656725

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; TELEFAX: 202-942-8484
; INFORMATION FOR SEQ ID NO: 6:
; SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
TYPE: amino acid
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
US-08-440-391-6
                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
US-08-440-391-24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 16; Conservative 0
                                                                                                                                                                                                                                                                                                                                                Sequence 24, App. Patent No. 56567
                                                                                                                                                                                                                 GENERAL INFORMATION:

APPLICANT: CHITTENDEN, Thomas D.; and
APPLICANT: LUTZ, Robert J.

TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS

NUMBER OF SEQUENCES: 34
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PALENTIN Release #1.0, Version #1.25
                                                                                    STREET: 1455...
STREET: Hashington
CITY: Washington
STATE: D.C.
ZIP: 20004
ZIP: 20004
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
CPMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING PatentIn Release #1.0, Version #1.25
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/OU
FILING DATE: 12-MAY-1995
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: LUTZ, ROBERT J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 100
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                   ADDRESSEE: Hale and Dorr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: D.C
ZIP: 20004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KKLSECLKRIGDELDS 16
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 81; DB 1;
Pred. No. 5.4e-07
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Query Match

100.0%;

Score 81;

DB 2;

Length 26;

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; MOLECULE TYPE: US-08-908-597A-6
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TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-440-391-24
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US-08-908-597A-6
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Best Local Similarity 100.0%;
Matches 16; Conservative 0
                                                                                                                                     CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION UNMERE: US/08/440,391
PILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REFERENCE/DOCKET NUMBER: 104322.147
TELECOMMUNICATION INFORMATION:
TELECPHONE: 202-942-8440
TELECPHONE: 202-942-8440
                                                                TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                          MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, ROBERT J.
TITLE OF INVENTION: NODULATE APPLICES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET: 1455 Peni
CITY: Washington
STATE: D.C.
                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/0
FILING DATE: 12-MAY-1995
                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       , Application US/08908597A 5863795
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                                                  amino acid
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1455 Pennsylvania Avenue, N.W.
                                                                    26 amino acids
                  peptide
                                                                                                                                                                                                                                                                                                                                           US/08/908,597A
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                                                                                                                                                                               104322.147
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Pred. No. 5.4e-(
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RESULT 6
US-09-236-385A-6
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                                                                         Sequence 6, Application US/09236385A
Patent NO. 6221615
GENERAL INFORMATION:
GENERAL SET THOMAS D.; and
LUTZ, Robert J.
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Matches 16; Conservative
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                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/44(
APPLICATION NUMBER: US/08/44(
FILING DATE: 12-MAX-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REGISTRATION NUMBER: 104:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0.
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CORRESPONDENCE ADDRESSE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                    TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
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TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
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CLASSIFICATION: 530
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                                                                                                                                                                                                                          6
NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
                                                TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KKLSECLKRIGDELDS 21
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO:
                                                                                                                                                                                                                                                                                                       100.0%; Score 81; DB 2;
100.0%; Pred. No. 5.4e-07;
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Mismatches
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TYPE: amino acids

TYPE: amino acid

TOPOLOGY: linear

MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-236-385A-6
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US-09-236-385A-24
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GENERAL INFORMATION:
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TELEPHONE: 202-942-8400
TELEPA: 202-942-8484
INFORMATION FOR SEQ ID NO: 6:
TELEPHONE: 202-942-841
TELEPAX: 202-942-8484
TINFORMATION FOR SEQ ID NO: 24:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                            COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compartible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION UMMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: CUNKNOWN>
ATTORNEY/AGENT INFORMATION:
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APPLICATION NUMBER: US/09/236,385A
APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: MIXON, HENRY N.
REGISTRATION NUMBER: 32,073
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
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ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: CHITTENDEN, Thomas D.; and LUTZ, Robert J.
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                                                                                         TELECOMMUNICATION INFORMATION:
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STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Washington
STATE: D.C.
                                                                                                                                      REGISTRATION NUMBER: 32,073
                                                                                                                                                             NAME: WIXON,
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                                                                     202-942-8400
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                                                                                                                                                             HENRY N.
                                                                                                                (C) ATTORNEY DOCKET NO. 104322.147CIP
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TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
PCT-US96-06122-6
                                                                          RESULT 9
PCT-US96-06122-24
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PCT-US96-06122-6
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, V.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/""
FILING DATE: HPP"
CLASSIFICATION TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE TO BE 
Sequence 24. Application PC/TUS9606122 GENERAL INFORMATION:
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Best Local Similarity 100.0%; Pred. No. 5.4e-07;
Matches 16; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
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TELEPAX: 202-947-8484
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
LENCTH: 26 amino acids
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NAME: WIXON, HERRY N.
REGISTRATION UNMBER: 32,073
REFERENCE/DOCKET NUMBER: 1043
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
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APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAY-1995
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CITY: Washington
STATE: D.C.
ZIP: 20004
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CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                                                                                                                                                                         Local
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                                                                                                                                                                                                                                                                                                                                                                                             Similarity
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TYPE: amino acid
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1455 Pennsylvania Avenue, N.W.
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ilarity 100.0%;
Conservative (
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Pred. No. 5.4e-07;
0; Mismatches 0;
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       CLASSIFICATION:
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; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
pcT-US96-06122-24
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION UMBER: US 08/440,391
FILING DATE: 12-MAY-1995
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 104322.147/
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPAN: 202-942-8400
TELEPAN: 202-942-8404
INFORMATION FOR SEQ UD NO: 24:
SEQUENCE CHARACTERISTICS:
LENGTH: 26 amino acids
TYPE: Smino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 13, Application US/08440391 Patent No. 5656725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.0%; Score 81; DB 5; Best Local Similarity 100.0%; Pred. No. 5.4e-07; Matches 16; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: Washington
STATE: D.C.
ZIP: 20004
COMPUTER READABLE FORM:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-TOX-MS-DOS
SOFWMARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US96/06122
ETYTAN DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                              APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, ROBERT J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: IMMUNOGEN, INC.
TITLE OF INVENTION: MOVEL PEPTIDES AND C
TITLE OF INVENTION: WHICH MODULATE APOPT
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                 CITY.
STATE: D.C.
20004
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NOVEL PEPTIDES AND COMPOSITIONS
WHICH MODULATE APOPTOSIS
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1 KKLSECLKRIGDELDS 16

Query Match Best Local Similarity Matches 16; Conserv

Conservative

0;

Mismatches

0

Indels

0,

Gaps

0;

Length 34;

100.0%; Score 81; DB 1; 100.0%; Pred. No. 7.2e-07

WOLECULE TYPE: peptide
US-08-440-391-13

TELEFAX: 202-942-8484 INFORMATION FOR SEQ ID NO:

TELEPHONE: 202-942-8400

REFERENCE/DOCKET NUMBER:

TELEPHONE:

ATTORNEY/AGENT INFORMATION:

NAME: WIXON, HENRY N. REGISTRATION NUMBER:

32,073

104322.147

SEQUENCE CHARACTERISTICS LENGTH: 34 amino acid

LENGTH: 34 amino acids
TYPE: amino acid
TOPOLOGY: linear

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RESULT 11
US-08-908-597A-13
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                                                                                          ; MOLECULE TYPE: US-08-908-597A-13
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     Query Match
Best Local Similarity
Matches 16; Conserv
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                                                                                                                                                     INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 34 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNEY/ACENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, Robert J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: 0.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARF. Detect-
                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 1455 Penr
CITY: Washington
                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
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                                                                                                                                     amino acid
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1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                            202-942-8484
                                                                                                                         linear
                                                                                                     peptide
100.0%; pr
100.0%; pr
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                                                                                                                                                                                                                                                            104322,147
                     Score 81;
Pred. No.
       Mismatches
                     7.2e-07;
                                         DB 2;
                                    Length 34;
     Indels
     0;
   Gaps
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0;
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; TOPOLOGY: linear; MOLECULE TYPE: peptide; SEQUENCE DESCRIPTION: SEQ ID NO: 13: US-09-236-385A-13
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US-09-236-385A-13
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PCT-US96-06122-13
Sequence 13, Application PC/TUS9606122
GENERAL INFORMATION:
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GENERAL INFORMATION:
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Best Local
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                           NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
                                                                                                                                                                                  TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS TITLE OF INVENTION: WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20004

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFWARE: Patentin Release #1.0, Version #1.25

CURRENT APPLICATION NUMBER: US/09/236,385A

FILING DATE: 25-Jan-1999

CLASSIFICATION: <UNKNOWD>

ATTORNEY/AGENT INFORMATION:

NAME: WIXON, HENRY N.
                                                                                                                                                                                                                        APPLICANT:
                                                                                           CITY: Washington
                                                                                                              STREET:
                                                                           STATE:
                                                                                                                                                                                                                                                                                                                                                              1 KKLSECLKRIGDELDS 16
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ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: CHITTENDEN, Thomas D.; and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KKLSECLKRIGDELDS 16
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                                                                                                                                                                                                                                                                                                                                                                                                                  1 Similarity
16; Conser
                                                            20004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LENGTH: 34 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Application US/09236385A
                                                                                                          1455 Pennsylvania Avenue, N.W
                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                      IMMUNOGEN, INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%;
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Pred. No.
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7.2e-07;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-798-897-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 22, Application US/08798897
Patent No. 5789201
GENERAL INFORMATION:
APPLICANT: Guastella, John
TITLE OF INVENTION: Genes Coding For Bcl-y, a Bcl-2
TITLE OF INVENTION: Homologue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 100
Best Local Similarity 100
Matches 16; Conservative
                                                                                                                                                         COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/798,897
FILING DATE: February 11, 1997
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 1483.0140001
                                                                                                                                                                                                                                                                                                                                                                                STATE: DC
COUNTRY: USA
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 34 amino acids
                                                                                 TELEFAX: 202-371-2540 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HERRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US96/0612
FILING DATE: HEREWITH
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAX-1995
CLASSIFICATION:
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SOFTWARE: PatentIn Rel
CURRENT APPLICATION DATA:
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                                     SEQUENCE CHARACTERISTICS:
LENGTH: 42 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 53
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
STREET: 1100 New York Avenue, N.W., Suite 600
                                                                                                TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-371-2600
TELEFAX: 202-371-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STREET: 1100 New CITY: Washington
TYPE: amino acid
STRANDEDNESS: no
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not relevant
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in Release #1.0, Version #1.25
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Pred. No. 7,2
0; Mismatches
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7.2e-07;
nes 0;
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COMPUTER: IBM PC-FORMATION:
COMPUTER: IBM PC-FORMS-DOS
OPERATING SYSTEM: PC-FOR/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/978,523
FILING DATE: herewith
CLASSIFICATION: 424
PRIOR APPLICATION NUMBER: US 08/798,897
FILING DATE: February 11, 1997
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
NAME: Esmond, Robert W.
REGISTRATION NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 32,893
REFERENCE/DOCKET NUMBER: 13,893
REFERENCE/DOCKET NUMBER: 32,893
REFERENC
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US-08-978-523-22
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TITLE OF INVENTION: Homologue
NUMBER OF SEQUENCES: 53
CORRESPONDENCE ADDRESS:
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STATE: DC
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STRANDEDNESS: not
TOPOLOGY: linear
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1 KKLSECLKRIGDELDS 16
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                                                                                                                                                                                                              Length 42
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Gapop 10.0 , Gapext 0
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Copyright (c) 1993 - 2000 Compugen Ltd
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## ALIGNMENTS

Bax-delta protein - human
C. Species: Homo sapiens (man)
C. Species: Homo sapiens (man)
C. Species: Homo sapiens
C. Species: Homo sapiens
C. Species: JC7255
R. Schmitt, E.; Paquet, C.; Beauchemin, M.; Dever-Bertrand, J.; Bertrand, R.
Biochem. Biophys. Res. Commun. 270, 868-879, 2000
A.; Title: Characterization of Bax-delta, a cell death-inducing isoform of Bax.
A.; Reference number: JC7255
A.; Accession: JC7255
A.; Accession: JC7255
A.; Accession: JC7255

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A;Molecule type: mRNA
A;Residues: 1-179 <SCH>
A;Cross-references: GB;AF247393
A;Experimental source: cancer promyelocytic cells
C;Comment: This protein, a member of the Bcl-2 family, has a proapoptotic effect.
A:Cross-references: GDB:228082; OMIM:600040 A:Map position: 19q13.3-19q13.4 C:Superfamily: bcl transforming protein C:Keywords: alternative splicing; blocked and C:Keywords: alternative splicing; blocked and C:Keywords:
                                                                                                                                                                                                                                                                                                                                            RESULT
A47538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C;Superfamily: bcl transforming protein
C;Keywords: transmembrane protein
                                                                                                                                                                                                                                                                                                                                                                                                               밁
                                                                                                                                                                                                                                                                                                                                                                                                                                            Š
                                                                                       C; Genetics:
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A; Residues: 1-192 <OLT>
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                                                                     A; Gene: GDB:BAX
                                                                                                      A; Cross-references: GB:L22473; NID:g388165; A; Note: the amino end of the mature protein
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100.0%; Pred. No. 1.5e-05;
tive 0; Mismatches 0;
   blocked amino end; heterodimer; homodimer; transmem
                                                                                                      PIDN:AAA03619.1; is blocked
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F;172-191/Domain: transmembrane

#status predicted <TMM1>

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bcl-2-associated protein x '- mouse N;Alternate names: BAX; programmed cell death membrane protein x C:Species: Mus musculus (house mouse) C;Date: 03-May-1994 #sequence_revision 03-May-1994 #text_change 17-Nov-2000 C;Accession: D47538 R;Oltvai, Z.N.; Milliman, C.L.; Korsmeyer, S.J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A:Gene: GDB:BAX
A:Cross-references: GDB:228082; OMIM:600040
A:Map position: 19q13.3-19q13.4
C:Superfamily: bcl transforming protein
C:Keywords: alternative splicing: blocked amino end; cytosol; heterodimer; homodimer
                                                                                                                                            A; Gene: bax
C; Superfamily:
                                                                                                                                                                                                                                                       Cell 74, 609-619, 1993
A;Title: Bcl-2 heterodimerizes in vivo with a conserved
A;Reference number: A47538; MUID:93364978
A;Accession: D47538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cell 74, 609-619, 1993
A;Title: Bcl-2 heterodimerizes in vivo with a conserved homolog, Bax, that accelerates
A;Reference number: A47538; MUID:93364978
A;Accession: B47538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   밁
                           9
                                                                                                                                                                                       A; Molecule type: mRNA
A; Residues: 1-192 <OLT>
A; Cross-references: GB:L22472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-218 <OLT>
A; Cross-references: GB:L22474; NID:g388167; PIDN:AAA03620.1;
A:Note: the amino end of the mature protein is blocked
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     bcl-2-associated protein x, beta splice form - human N;Alternate names: BAX; programmed cell death membrane C;Species: Homo saplens (man)
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B47538
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Best Local Similarity
Matches 16; Conserv
                                                                             Query Match
Best Local
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Best Local Similarity 100.0%;
Matches 16; Conservative (
                                                              Matches
57
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nes 15; Conserv
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                           1 KKLSECLKRIGDELDS 16
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KKLSECLRRIGDELDS
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ilarity 100.0%;
Conservative (
                                                                          96.3%;
93.8%;
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                                                          Score 78; DB 2;
Pred. No. 4.9e-05;
1; Mismatches (
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Pred. No. 1.6e-05;
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Pred. No. 1.8e-05;
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Best Local S
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7; Conserv
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ser/thr protein kinase, probable [imported] - Sulfolobus solfataricus C;Species: Sulfolobus solfataricus C;Species: Sulfolobus solfataricus C;Date: 24-May-2001 *sequence_revision 24-May-2001 *text_change 24-May-2001 C;Accession: A90506 R;She, Q.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.; Jong, I.; Jeffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.; arrett, R.A.; Ragan, M.A.; Sensen, C.W.; Van der Oost, J. submitted to GenBank, April 2001 A;Bescription: Sulfolobus solfataricus complete genome. A;Bescription: A90506 A;Accession: A90506 A;Status: preliminary A.,Status: preliminary A.,Status: preliminary A.,Status: preliminary
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                                                        FADOAA
alpha-actinin - slime mold (Dictyostelium discoideum)
C:Species: Dictyostelium discoideum
C:Date: 30-Jun-1991 #sequence_revision 30-Jun-1991 #text_change 22-Jun-1999
C:Accession: S00103; A29006
R:Noegel A: Witke, W; Schleicher, M.
EEBS Lett. 221, 391-396, 1987
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: DNA
A;Residues: 1-669 <KUR>
A;Cross-references: GB:AE006641; NID:gl3816645; PIDN:AAK43304.1;
C;Genetics:
A;Gene: SSO3207
A;Title: Calcium-sensitive non-muscle alpha-actinin contains EF-hand structures A;Reference number: 800103; MUID:87304650
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I53295
bcl-2-associated protein x - rat (fragment)
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Pred. No. 6.9;
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Redder
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C;Superfamily: alpha-actinin; alpha-actinin actin-binding domain hockeywords; actin binding; calcium binding; duplication; EF hand; lF;21-236/Domain: alpha-actinin actin-binding domain homology <ACT>
F;21-236/Domain: spectrin/dystrophin repeat homology <SP1>F;386-493/Domain: spectrin/dystrophin repeat homology <SP2>F;502-607/Domain: spectrin/dystrophin repeat homology <SP3>F;502-607/Domain: spectrin/dystrophin repeat homology <SP3>F;616-717/Domain: spectrin/dystrophin repeat homology <SP4>F;300-762/Domain: calmodulin repeat homology <EF2>F;766-798/Domain: calmodulin repeat homology <EF2>
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                   C;Species: Helicobacter pylori
A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 08-Oct-1999
C;Accession: F71868
E;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Doig, P.C.;
Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; V
Nature 397, 176-180, 1999
                                                                                                                                                                                                   RESULT
F71868
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A;Residues: 92-359,'P',361-500,'T',502-505 <WIT>
A;Cross_references: EMBL;X04324; NID:g7202; PIDN:CAA27855.1; PID:g929034
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A; Molecule type: mRNA
A; Residues: 1-862 <NOE>
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A;Cross-references:
A;Map position: 7L
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             hypothetical protein YGL202w - yeast (Saccharomyces cerevisiae)
N;Alternate names: hypothetical protein G1253
C.Species: Saccharomyces cerevisiae
C;Date: 17-May-1996 #sequence_revision 17-May-1996 #text_change
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                                                                                                                                                                           hypothetical protein jhp0948 -
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A;Experimental source: strain S288C
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A; Residues: 1-500 <BJO>
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les 9; Conserv
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sequence comparison of two
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18;
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33;
unrelated isolates of the human
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gastric path
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A;Status: Hackers DNA
A;Molecule type: DNA
A;Residues: 1-92 <ARN>
A;Cross-references: GB:AE001524; (
A;Cross-imental source: strain J99
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C;Date: 20-Feb-1995 #sequence_revision 20-Feb-1995 #text_change
C;Accession: PC2235; PC2156
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             R:Nimura, K.; Yoshikawa, H.; Takahashi, H.
Blochem. Blophys. Res. Commun. 201, 466-471, 1994
A:Title: Identification of dnak multigene family in
A:Reference number: PC2156; MUID:94257019
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PC2235
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A; Status: preliminary
                                                                                      A;Title: Complete genome sequence of Methanobacterium thermoautotrophicum Delta
A;Reference number: A69000; MUID:98037514
A;Accession: E69057
                                                                                                                                                                                                                                          molybdopterin-guanine dinucleotide biosynthesis MobA related protein - Methanobacteri
C;Species: Methanobacterium thermoautotrophicum
C;Date: 05-Dec-1997 #sequence_revision 05-Dec-1997 #text_change 22-Oct-1999
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C; Keywords:
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C; Superfamily:
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A; Residues: 1-197 <NIM>
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A;Cross-references: GB:AE000803; GB:AE000666; A;Experimental source: strain Delta H
                                      A; Molecule type: DNA
A; Residues: 1-213 <MTH>
                                                                        A; Status: preliminary; nucleic acid
                                                                                                                                                                  χ.,
                                                                                                                                                                                                        R; Smith, D.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross_references: DDBJ:D28550; NID:g507816; PIDN:BAA05902.1; PID:d1006452; PID:g507
                                                                                                                                                R;Smith, D.R.; Doucette-Stamm, L.A.; Deloughery, C.; Lee, H.; Dubois, J.; Qiu, D.; Spadafora, R.; Vicalre, R.; Wang, Y.; Wierzbowski, J.; Gibson, S.; Church, G.M.; Daniels, C.J.; Mao, J.; Rice, P.; Noelling, J.; Ree J.; Bacteriol. 179, 7135-7155, 1997
                                                                                                                                                                                                                        Accession: E69057
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Best Local
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heat shock; stress-induced
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8; Conser
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8; Conser
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Pred. No. 9.2;
4; Mismatches
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                                                                        not shown;
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                    NID:g2621179;
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                  PIDN: AAB84649.1;
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Query Match Best Local Similarity

53.1%;

Score Pred.

43; DB No. 21;

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Length

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A; ACCESSIONA
A; Molecule type: DNA
A; Residues: 'L', 2-339 <HO2>
A; Residues: 'E', 2-339 <HO2>
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A;Title: Complete sequence and gene organization of the genome of a hyperathermophilic A;Reference number: A71000; MUID:98344137
A;Accession: E71098
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                       A;Molecule type: DNA
A;Residues: 1-339 <HON>
A;Cross references: EMBL:X51B40
A;Cross references: EMBL:X51B40
R;HOnka, E; Fabry, S; Niermann, T; Palm, P; Hensel, submitted to the EMBL Data Library, February 1990
A;Reference number: S08689
A;Accession: S08689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Honka, E.; Fabry, S.; Niermann, T.; Palm, P.; Hensel, R. Eur. J. Biochem. 188, 623-632, 1990
A;Title: Properties and primary structure of the L-malate A;Reference number: S08981; MUID:90235834
A;Accession: S08981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Species: Methanothermus fervidus
C;Date: 21-Nov-1993 #sequence_revision 10-Nov-1995 #text_change
C;Accession: S089B1; S086B9
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                                                                                                                                                                             A;Start codon: TTG
C;Superfamily: malate dehydrogenase ylbC
C;Keywords: oxidoreductase: tricarboxylic acid cycle
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C; Superfamily: aroM protein
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A;Experimental source: strain OT3
A;Note: this accession replaces an interim accession for a sequence replaced by GenBank
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: DNA
A; Residues: 1-217 <KAW>
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C; Species: Pyrococcus horikoshii
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nes 7; Conserv
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KKLVEKLKEIADELN 334
                                     KKLSECLKRIGDELD 15
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Pred. No.
                                                                                                Score 43; DB Pred. No. 32;
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Search completed: September 20, Job time: 484 sec

2002,

10:39:12

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DNA Res. 8, 205-213, 2001

A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A;Reference number: AB1807; MUID:21595285; PMID:11759840

A;Accession: AF1909
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1002 <KUR>
A;Cross-references: GB:BA000019; PIDN:BAB72781.1; PID:g17130169; GSPDB:GN00179
A;Experimental source: strain PCC 7120
C;Genetics:
A;Gene: a110824
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C;Accession: AF1909
R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Nakazaki, N.; Silmpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Nakazaki, N.; Silmpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Nakazaki, N.; Silmpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Nakazaki, N.; Silmpo, S.; Nakazaki, N.; Silmpo, S.; Nakazaki, N.; Silmpo, S.; Nakazaki, N.; Silmpo, S.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Nakamura, Y.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Nakamura, Y.; Nakamura, M.; Yamada, M.; Yamada, M.; Nakazawa, M.; Nakaza
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Date: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001 C;Accession: C99664
C;Accession: C99664
R:Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium A;Reference number: A99900; MUID:21359325; PMID:21359325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULY 15.

C96964
SAM-dependent methyltransferase related to tRNA(uracyl-5-)-methyltransferase
C;Species: Clostridium acetobutylicum
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AF1909
В
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A; Residues: 1-460 <KUR>
A; Cross-references: GB:AE001437; PIDN:AAK78502.1;
A; Experimental source: Clostridium acetobutylicum
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Best Local Similarity
Matches 10; Conserv
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103 KYVECLKRIG-KLD
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Pred. No.
5; Mismato
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Pred. No. 52;
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Copyright (c) 1993 - 2000 Compugen Ltd.
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MEDLINE-98200607; PubMed-9531611;
Meljerink J.P.P., Mensink E.J.B.M., Wang K., Sediak T.W.,
Sloetjes A.W., de Witte T., Waksman G., Korsmeyer S.J.;
"Hematopoietic malignancies demonstrate loss-of-function:
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                                                                                                                                                                                                                                                                                                           MEDLINE-93364978; PubMed-8358790;
Oltval Z.N., Milliman C.L., Korsmeyer
"Bcl-2 heterodimerizes in vivo with a
accelerates programmed cell death.";
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PROSITE; PS01080; BH1; 1.

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PROSITE; PS01259; BH3; 1.

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                                                                                                                                                                                                                                                                                                                                                                                                                      Apoptosis regulator BAX, BAX.
                                                                                                                                                                                                                                                                                                                                                                                                                                        01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation updat
                                                                                                                                                                                                                                                                     MUTAGENESIS, AND FUNCTION OF BH3 DOMAIN MEDLINE=96091131; PubMed=8521816;
                                                                                                                                                                                                                                                                                                   accelerates programmed Cell 74:609-619(1993).
                                                                                                                                                                                                                                                                                                                                                    TISSUE-B-cell;
                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BAXA_HUMAN
Q07812;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Apoptosis;
                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KKLSECLKRIGDELDS 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   th 100.0%;
| Similarity 100.0%;
| 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              72
                                                                                                                                                                                                                                                                                                                                                                                                                              membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BH1.
BH2.
POTENTIAL.
W; 6B4D5BABF1D5F87E C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 81; DB 1;
Pred. No. 7e-06;
; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                              isoform alpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              192
                                                                                                                                                                                                                                                                                                                       conserved
                                                                                                                                                                                                                                                                                                                                S.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                        update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ş
                                                                                                                                                                                                                                        and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                       homolog, Bax,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 192;
                                                                                                                                                                                                                                                           R.G.,
                                                                                                                                                                                                                                          вн2,
                                                                                                                                                                                                                                          mediates cell
                                                                                                                                                                                                                                                             Gallo
                                                                                                                                                              mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                              of.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
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Q
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BAXB_HUMAN
                                                                                                                                                                                                                                                                                                   В
                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local s
Matches 16
                                                                                                                                                                                    01-FEB-1995 (Rel. 31, C
01-FEB-1995 (Rel. 31, I
16-OCT-2001 (Rel. 40, L
Apoptosis regulator BAX
                                                                                                                                                                            Apoptosis BAX.
                  "RC1-2 neteronamed cell death.";
accelerates programmed cell death.";
Cell 74:509-519(1993).
-!- FUNCTION: ACCELERATES PROGRAMED CELL
-!- FUNCTION: THE APOPTOSIS REPRESSOR
                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DOMAIN
TRANSMEM
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                       MEDLINE=93364978; PubMed=8358790;
Oltval Z.N., Milliman C.L., Korsmeyer
"Bcl-2 heterodimerizes in vivo with a
accelerates programmed cell death.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; Q07817
MIM; 600040;
                                                                                                  SEQUENCE FROM N.A.
TISSUE-B-cell;
                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                        Q07814;
01-FEB-1995
                                                                                                                                                                                                                                               BAXB_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR002475; IIInterPro; IPR000712; IPR000712; IPR000712; Bcl-2; SMART; SM00337; BCL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; L22473; AAA03619.1;
PIR; A47538; A47538.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -
                                                                                                                                NCBI_TaxID-9606;
                                                                                                                                                                   Homo sapiens
 ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NIAMOC
                                                                                                                                                                                                                                                                                                   57 KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                          <u>س</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
DISSASE: DEFECTS IN BAX ARE FOUND IN SOMI
ACUTE LYMPHOBLASTIC LEUREMIA.
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOI
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOI
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOI
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
ANTAGONIZING THE APOPTOSIS HOMOLOG ELB 19K PROTEIN. SUBUNIT: FORMS HOMODIMERS A
                                                                                                                                                                                                                                                                                                                          KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q07817; 1MAZ.
                                                                                                                                                                                                                                                                                                                                               l Similarity
16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PS50062; BCL2_F
PS01080; BH1; 1
PS01258; BH2; 3
PS01259; BH3; 1
                                                                                                                                                                                                                                                                                                                                                                                                     192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Transmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                                                      59
98
150
172
                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                   (Human)
                                                                                                                                                                                                                                                                                                                                                                                                     ΑA;
                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCL2_FAMILY;
                                                                                                                                          Chordata; (
                                                                                                                                                                                                                                                                                                                                                                                                                                      73
118
165
192

    Last sequence up
0, Last annotation
BAX, cytoplasmic i

                                                                                                                                                                                                                                                                                                                                                                                                      21184
                                                                                                                                                                                                                                                                                                                                                         100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BCL2_family.
Bcl_2.
                                                                                                                                                                                                                                                                                                                       16
                                                                                                                                                                                                                                                                                                     72
                                                                                                                                                                                                                        Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Alternative splicing; Disease mutation
                                                                                                                                                                                                                                                                                                                                                                                                      MW;
                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                                                                                                                                                                                                                                    BH1.
BH2.
POTENTIAL.
G -> R (IN
                                                                                                                                                                                                                                                                                                                                                                                                               /FTId-VAR_007809
                                                                                                                                                                                                                                                                                                                                                                                                                           LEUKEMIA)
 AND
                                                                                                                                             Craniata; Vertebrata;
Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                        Score 81; DB 1;
Pred. No. 7e-06;
                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                      6C0CDB0A7DEE4994
                                                                                                                                                                                                                                                                                                                                                 Mismatches
 HETERODIMERS
                                                                                                                                                                                                              update)
                                                                                                                                                                                                                                                                                                                                                                                                                                     (IN T-CELL
                                                                                                                                                                                          n update)
                                                                S.J.;
conserved
                                                                                                                                                                                                                                               218 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOME
                        DEATH
BCL-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN 1
DOMAIN 2
DOMAIN 3
                                                                                                                                             Hominidae;
                                                                                                                                                                                                                                                                                                                                                                    Ξ
                                                                                                                                                                                          beta
                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PATIENTS WITH
                        OR BY
  TOGETHER
                                                                                                                                                                                                                                                                                                                                                                                                                                      ACUTE LYMPHOBLASTIC
                                                                                                                                                                                                                                                                                                                                                                                                      CRC64;
                                                                                                                                                                                                                                                                                                                                                                    Length 192
                                                                  homolog,
                      BINDING
ITS ADEA
                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (BH1).
(BH2).
(BH3).
                                                                                                                                                          Euteleostom1;
                                                                                                                                                Homo
                        ADENOVIRUS
  HTIW
                                                                   Вах,
                                 TO,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T-CELL
                                                                                                                                                                                                                                                                                                                                                0
  BCL-2
                                                                  that
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Best Local
                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MIN; 60004U;
Interpro; IPR002475; BCL2;
Interpro; IPR000712; BCL_
Interpro; IPR000712; BCL_
Pfam; PF00452; BCL-2; 1.
                                                                                                                                                                                                         BAXA_MOUSE
Q07813;
Q1-FEB-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            the
            STRAIN-C57BL/6 x DBA/2;

MEDLINC-93364978; PubMed-8358790;

MITVAI Z.N., Milliman C.L., Korsmeyer

"Bcl-2 heterodimerizes in vivo with a

accelerates programmed cell death.";

Cell 74:609-619(1993).
                                                                                                                      Mus musculus (Mouse)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                   01-FEB-1995
16-OCT-2001
                                                                                                                                                                                                                                                                                                                                                                                                                              Apoptosis; Alternative splicing.
DOMAIN 59 73 BH3.
DOMAIN 98 118 BH1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROSITE; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS50062; BCL2_FAMILY; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                     SEQUENCE FROM N.A
                                                                                                           NCBI_TaxID=10090
                                                                                                                                                                       Apoptosis
                                                                                                                                                                                                                                                MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; Q07817
MIM; 600040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PIR; B47538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    use by non-profit institutions as long as modified and this statement is not removed. U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   <del>:</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF
-!- DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID,
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 HOMOLOGY DOMAIN 1 (BH
-!- SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH
-!- SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH
-!- SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                57
                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                     1 KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EM European Bioinformatics Institute. There are no restr by non-profit institutions as long as its content
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYTOPLASMIC ISOFORMS, BETA, ALTERNATIVE SPLICING.
                                                                                                                                                                                                                                                                                                KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     L22474; AAA03620.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q07817; 1MAZ
                                                                                                                                                                                                                                                                                                                                              16;
                                                                                                                                                                      95 (Rel. 31, 0
195 (Rel. 31, 1
101 (Rel. 40, 1
1 regulator BA)
                                                                                                                                                                                                                                                                                                                                                                                                         218
                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B47538.
                                                                                                                                                                                                                                                                                                                                                                                                                   05T
86
                                                                                                                                              (Mouse)
  ACCELERATES
                                                                                                                                                                                                                                                                                                                                                                                                         AA:
                                                                                                                                                                                                                                   STANDARD;
                                                                                                                      Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                     165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BCL-X(L), MCL-1 AND A1.
ATION: Cytoplasmic.
DUCTS: THE MEMBRANE ISOFORM ALPHA AND THE THREE
DUCTS: TARE GENERATED BY
                                                                                                                                                                  1, Last sequence update)
), Last annotation update)
BAX, membrane isoform alpha
                                                                                                                                                                                                                                                                                                                                                                                                         24220 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BCL2_family.
Bcl_2.
                                                                                                                                                                                                                                                                                                                                                        100.0%;
                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EXPRESSED IN A WIDE VARIETY OF TISSUES
  PROGRAMED
                                                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                     вн2
                                                                                                                                                                                                                                                                                                                                                        Score 81;
Pred. No.
                                                                                                                  Craniata; Vertebrata; Euteleostomi;
Sciurognathi; Muridae; Murinae; Musi;
                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                       F69DCD70F960192F CRC64;
                                                                                                                                                                                                                                                                                                                                            Mismatches
CELL
                                                                                                                                                                                                                                  192
                                  S.J.;
conserved homolog,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (See http://www.isb-sib.ch,
                                                                                                                                                                                                                                                                                                                                                      7.9e-06;
 DEATH
                                                                                                                                                                                                                                  ₿
                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BY BIK, BID,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Usage
 ΥВ
                                                                                                                                                                                                                                                                                                                                                                  Length 218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THEIR INTERACTION
 BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BH1).
(BH2).
(BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     γď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            restrictions on
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL
                                    Вах,
  Ö,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ø
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        collaboration -
 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              no
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PROSITE; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS50060
   TRANSMEM
SEQUENCE
                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboratic between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercial
                                                                  Apoptosis;
DOMAIN
                                                                                                                                                                                  Pfam;
                                                                                                                                                                                                                                                                                                entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                  PROSITE; PS50062; BCL2_FAMILY; 1.
                                                                                                                                                                                 InterPro; IPR000712;
Pfam; PF00452; Bcl-2;
                                                                                                                                                                                                                                                   HSSP;
                                   DOMAIN
                                                    DOMAIN
                                                                                                                                                                                                                 InterPro; IPR002475;
                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ALTERNATIVE
CYTOPLASMIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBUNIT: FORMS HOMODIMERS AND HETERODIMERS ELB 19K PROTEIN, BCL-X(L), MCL-1 AND A1. SUBCELLULAR LOCATION: Membrane-bound.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CESSATION OF SPERM PRODUCTION. SUBUNIT: FORMS HOMODIMERS AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPLICING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ANTAGONIZING THE APOPTOSI HOMOLOG E1B 19K PROTEIN. ACTIVATION OF CASPASE-3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LEADS TO LYMPHOID HYPERPLASIA AND MALE STERILITY,
                                                                                                                                                                                                                                    MGI:99702;
                                                                                                                                                                                                                                              L22472; AAA03622.1; -. Q07817; IMAZ.
                                                                                   Transmembrane; Alternative
   ΑA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRODUCTS: A 21 kDa MEMBRANE PROTEINS BETA AND GAMMA ARE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE APOPTOSIS REPRESSOR BCL-2 OR ITS ADENOVIRUS 19K PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C, F CASPASE-3, AND THEREBY APOPTOSIS. BAX DEFICIENCY
118 B
165 B
192 F
21394 MW;
                                                                                                                                                                                                    BCI
                                                                                                                                                                                                                 BCL2_family.
 POTENTIAL.
D2E0B3566579FAFF CRC64;
                                                                                 splicing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROTEIN ALPHA AND THE TWO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FOR THEIR INTERACTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOGETHER WITH BCL-2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                ω ν 1
                                                                                                                                                                                                                                                                                                                                                                                                                                               (BH1).
(BH2).
(BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BECAUSE OF THE
                                                                                                                                                                                                                                                                                                                                                                                 collaboration
L outstation -
                                                                                                                                                                                                                                                                                                                                  commercia.
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                                                                                                                                                BAXA_RAT
                                                                                                                                                                                       맑
                                                                                                                                                          RESULT
                                                                                                                                                                                                                                            Query Match
Best Local
                                                                                                                                                                                                                                 Matches
                                                                                        Q63690; Q62995; Q64383;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation updat
                                       Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                    BAXA_RAT
          SEQUENCE FROM N.A.
                                                             Rattus norvegicus (Rat).
                                                                                  Apoptosis regulator BAX,
MEDLINE=96178771; PubMed=8600029
                                                                                                                                                                                         57
                                                                                                                                                                                                            1 KKLSECLKRIGDELDS 16
                                                                                                                                                                                       KKLSECLRRIGDELDS 72
                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                  Conservative
                                                                                                                                     STANDARD;
                                        Chordata;
Rodentia;
                                                                                                                                                                                                                                             96
                                                                                                                                                                                                                                           3.34
                                                                                  membrane isoform alpha.
                                                                                                                                                                                                                                           Score 78;
Pred. No.
                                       Sciurognathi; Muridae;
                                                   Craniata; Vertebrata; Euteleostomi;
                                                                                                                                     PRT;
                                                                                                                                                                                                                                 Mismatches
                                                                                                                                     192
                                                                                          update)
                                                                                                                                                                                                                                            2.1e-05;
                                                                                                                                                                                                                                                      DB 1;
                                                                                                                                     A
                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                                   Length 192;
                                         Murinae; Rattus
                                                                                                                                                                                                                                 0;
                                                                                                                                                                                                                                 Gaps
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0;

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PROSITE; PS01080; PROSITE; PS01258; PROSITE; PS01259; PROSITE; PS50062; PROSITE; PS50062; PROSITE; PS50062; PROSITE; PS50062; PS5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Tilly J.L., Tilly K.I., Kenton M.L., Johnson A.L.;

"Expression of members of the bcl-2 gene family in the immature rat ovary: equine chorionic gonadotropin-mediated inhibition of granulosa cell apoptosis is associated with decreased bax and constitutive bcl-2 and bcl-xiong messenger ribonucleic acid levels.";
Endocrinology 136:232-241(1995).

-1- FUNCTION: ACCELERATES PROGRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING THE APOPTOSIS REPRESSOR BCL-2 OR ITS ADENOVIRUS HOMOLOG ELB 19K PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C, ACTIVATION OF CASPASE-3, AND THEREBY APOPTOSIS.

-1- SUBGUNIT: FORMS HOMODIMERS AND HETERODIMERS TOGETHER WITH BCL-2, ELB 19K PROTEIN, BCL-X(L), MCL-1 AND A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      magison D.L., Pfeiffer S.E.;
"Cloning of the 3' end of rat bax-alpha and corresponding
developmental down-regulation in differentiating primary, cultured
oligodendrocytes.";
TRANSMEM
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Han J. Sabbatini P., Perez D., Rao L., Modha D., White "The E1B 19k protein blocks apoptosis by interacting wit inhibiting the p53-inducible and death-promoting Bax progenes Dev. 10:461-477(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL: U49729; AAC26327.1; -. EMBL: U59184; AAC55998.1; -. EMBL: U32098; AAA75200.1; -. EMBL: $76511; AAC667000.2; -. HSSP: Q07817; 1MAZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                          DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ++++
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-SPRAGUE-DAWLEY; MEDLINE-95129487; PubM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-97147318; PubMed-8994223;
                                                                                                                                                                  Apoptosis;
DOMAIN
                                                                                                                                                                                                                                                                                                                               InterPro: IPR002475; BCL2_family.
InterPro: IPR00712; BCL2.
Pfam: PF00452; BCL-2; 1.
SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          or send an email to license@isb-sib.ch).
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                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TIS
HIGHEST LEVELS IN THE TESTIS AND OVARY.
DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAN
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INT
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUBCELLULAR LOCATION: Membrane-bound.
ALTERNATIVE PRODUCTS: A 21 kDa MEMBRANE PROTEIN ALPHA AND THE TWO
CYTOPLASMIC PROTEINS BETA AND GAMMA ARE GENERATED BY ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE SE
  ; Transmembrane; / 59 73 98 118 150 165 172 192 77 76 76 76 126 126
                                                                                                                                                                                                                                              ); BH1; 1.
); BH2; 1
BH3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     220:183-186(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=7828536;
                                                                                                                                                                                                                          BCL2_FAMILY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Ovary;
                                                                                                                                                                                              Alternative
BH3.
BH1.
BH2.
POTENTIAL.
S -> N (IN
L -> M (IN
C -> Y (IN
                                                                                                                                                                                              splicing
     REF.
REF.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BAK, BAD AND INTERACTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a collaboration
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RESULT 6
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Best Local S
Matches 15
Pfam; PF00307; CH; 2.
Pfam; PF00036; efhand; 2.
Pfam; PF000435; spectrin; 4
SMART; SM00033; CH; 2.
SMART; SM00054; EFh; 2.
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CONFLICT
SEQUENCE
                                                           HSSP; Q0108z; _____
DictyDb; DD01003; abpA.
InterPro; IPR001589; Actinin_act_bind.
InterPro; IPR001715; Calponin_hom.
InterPro; IPR001715; EF-hand.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13-AUG-1987 (Rel. 05, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Alpha-actinin, non-muscular (F-actin cross
                                                                                                                  EMBL; Y00689; CAA68685.1;
EMBL; X04324; CAA27855.1;
PIR; S00103; FADOAA.
HSSP; Q01082; 1BKR.
                                                                                                                                                                             entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the E
                                                                                                                                                                                                                                                                         -1- SUBUNIT: HOMODIMER, ANTIPARALLEL.
-1- SIMILARITY: CONTAINS 1 ACTIN-BINDING DOMAIN.
-1- SIMILARITY: CONTAINS 2 CALPONIN-HOMOLOGY (CH) DOMAINS.
-1- SIMILARITY: CONTAINS 2 EF-HAND CALCIUM-BINDING DOMAINS.
-1- SIMILARITY: CONTAINS 4 SPECTRIN REPEATS.
                                                                                                                                                                                                                                                                                                                                                structures and highly conserved regions."; FEBS Lett. 221:391-396(1987).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AACT_DICDI
P05095;
                                                                                                                                                                                                                                                                                                                                                                                                           Witke W.,
                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-86304574; PubMed-3745276;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A
                                                                                                                                                                                                    modified and this statement is not removed.
                                                                                                                                                                                                                  the European Bioinformatics Institute. Thuse by non-profit institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
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Noegel A., Witke W., Schleicher M.;
"Calcium-sensitive non-muscle alpha-actinin contains EF-hand
                                                          InterPro; IPR002048; InterPro; IPR002017;
                                                                                                                                                                                                                                                                                                                                                                                           Witke W., Schleicher M., Lottspeich F., Noe, Studies on the transcription, translation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 57
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 KKLSECLKRIGDELDS
                                                                                                                                                                                                                                                                                                                                        PROTEIN.
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15; Conserv
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159
21350
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93.8%;
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Pred. No. 2
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-> E (IN REF. 1).
7B3CD198D56DF589
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cross linking protein).
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2.1e-05;
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C STRAIN-SIGMA 1278B;

X MEDLINE-98151783; PubMed-9491083;

RI Taqui I., Vissers S., Cartiaux M., Urrestarazu A.;

RT "Characterisation of Saccharomyces cerevisiae ARO8 and ARO encoding aromatic aminotransferases I and II reveals a nev aminotransferase subfamily.";

RT aminotransferase subfamily.";
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Best Local (
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PROSITE; PS00019; ACTININ_1; 1.

PROSITE; PS00020; ACTININ_2; 1.

PROSITE; PS50021; CH; 2.

PROSITE; PS00018; EF_HAND; 2.

Actin_binding; Calcium-binding; R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REPEAT
CA_BIND
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CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
Aromatic amino acid aminotransferase I (EC 2.6.1.-).
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  Transferase; Aminotransferase. SEQUENCE 500 AA; 56177 MW;
                                                                   EMBL; Y13624; CAA73946.1; -. EMBL; Z72724; CAA96914.1; -.
                                                                                                                                                                                         modified
                                                                                                                                                                                                                                                                                                                           Bjourson A.J., McReynolds A.D.K., Wright L.F.; Submitted (MAY-1996) to the EMBL/GenBank/DDBJ-!- SIMILARITY: TO YEAST ARO9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Saccharomycetales;
NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ARO8_YEAST
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                                                                                                                                                          s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - Buropean Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way ified and this statement is not removed. Usage by and for commercial ittes requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                S0003170;
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9; Conserv
                                                                                                                                         s requires a license agreement (S an email to license@isb-sib.ch).
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                                                  ARO8
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SPECTRIN 2.
SPECTRIN 3.
SPECTRIN 4.
SPECTRIN 4.
EF-HAND 1 (BY SIMILARITY).
EF-HAND 2 (BY SIMILARITY).
T -> P (IN REF. 2).
T -> T (IN REF. 2).
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CH 2.
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Pred. No. 6.4;
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Matches 9; Conservative
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HSSP; P09372; 1DKG.
InterPro; IPR000740; GrpE.
Pfam; PF01025; GrpE; 1.
PROSITE; PS01071; GRPE; 1.
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16-OCT-2001
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SEQUENCE
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                                                        16-OCT-2001 (Rel. 40, Last sequence uplif-OCT-2001 (Rel. 40, Last annotation Probable mollybdopterin-guanine dinucle MOBA OR MTH147
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-94257019; PubMed=8198610;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GrpE protein
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30-MAY-2000
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NCBI_TaxID=145262; [1]
                                                      MOBA OR MTH143
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                     Methanothermobacter.
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SIMILARITY: BELONGS TO THE GRPE FAMILY
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                                                                                                                                                                                                                      Similarity
8; Conserv
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ation of dnaK multigene family in
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(Rel. 35, Last sequence update)
(Rel. 39, Last annotation update)
(HSP-70 cofactor) (Fragment).
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72.78;
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                                  Methanobacteriales; Methanobacteriaceae
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Pred. No.
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RA Aldredge T., Bashirzadeh R., Blakely D., Cook R., Gilbert K.,
RA Harrison D., Hoang L., Keagle P., Lumm W., Pothier B., Qiu D.,
RA Harrison D., Hoang L., Keagle P., Lumm W., Pothier B., Qiu D.,
RA Spadafora R., Vicare R., Wang Y., Wierzbowski J., Gibson R.,
RA Javani N., Caruso A., Bush D., Safer H., Patwell D., Prabhakar S.,
RA McDougall S., Shimer G., Goyal A., Pietrovski S., Church G.M.,
RA McDougall S., Shimer G., Goyal A., Pietrovski S., Church G.M.,
RA McDougall S., Mao J.-I., Rice P., Noelling J., Reeve J. N.,
RA McDougall S., Mao J.-I., Rice P., Noelling J., Reeve J. N.,
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Best Local Similarity
Matches 6; Conserv
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OR2514: Q9FMW2;

16-CCT-2001 (Rel. 40, Created)

01-MAR-2002 (Rel. 41, Last sequence update)

01-MAR-2002 (Rel. 41, Last senotation update)

01-MAR-2002 (Rel. 41, Last annotation update)

Adenylate kinase (EC 27.4.3) (ATP-AMP transphosphorylase).

ADK1 OR AT5G63400 OR MLE2.3.

Arabidopsis thaliana (Mouse-ara cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidaeurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/anndunce/or send an email to license@fisb-sib.ch).
                           "Structural analysis of Arabidopsis Sequence features of the regions of physically assigned P1 clones."; DNA Res. 4:401-414(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                         Weers B., Thornburg R.; "Characterization of the adenylate kinase.";
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Nakamura Y., Sato S., Kaneko T.,
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21556 MW; 6AE029D2B0AD8619 CRC64;
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RESULT 11

RESULT 10

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ID MOH, MA

AC P1614

AC 01-AP

DT 01-AP

DT 01-MA

AC Metha

OC Archa

OX NCBI-

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RP SEQUE

RC STRAI

RA HONKA

RT "Prop

RT Leur.

RA Graup

RR EDUII

RA Graup

RR MEDLII

RA Graup

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RI J. Ba

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R PROSOM; PRO0095; Adenylate_kin; 1.

R PROSTE; PS00113; ADENYLATE_KINASE; 1.

PROSTE; PS00113; ADENYLATE_KINASE; 1.

R PROSTE; PS00113; ATP-binding; Multigene family.

MW Transferase; Kinase; ATP-binding; Multigene family.

MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transferase; MW Transfera
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Best Local S
Matches 9
                                                                                                                                                                                  MEDLING AUDITION: MICHAEL R.H.;
Graupner M., Xu H., White R.H.;
"Identification of an archaeal 2-hydroxy acid dehydrogenase catalyzing
"Identification of an archaeal 2-hydroxy acid dehydrogenase catalyzing
"reactions involved in coenzyme biosynthesis in methanoarchaea.";
J. Bacteriol. 182:3688-3692(2000).
-I- FUNCTION: Acts on oxaloacetate, sulfopyruvate but not on pyruvate.
Has a higher selectivity for the coenzyme NADH than for NADPH.
Has a higher selectivity for the coenzyme NADH than for NADPH.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MDH_METFE P16142;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mendel; 33102; Arath;2711;33102.
InterPro; IPR000850; Adenylate_kin.
Pfam; PF00406; adenylatekinase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AF082882; AAC78478.1;
EMBL; AB007649; BAB08805.1;
HSSP; P07170; laky.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND SEQUENCE STRAIN=V24S / DSM 2088; MEDLINE=90235834; PubMed=2110059;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-APR-1990 (Rel. 14, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Malate/L-sulfolactate dehydrogenase (EC 1.1.1.37) (EC 1.1.1.82).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-APR-1990
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Properties and primary structure of the L-malate dehydrogenase the extremely thermophilic archaebacterium Methanothermus fervid Eur. J. Blochem. 188:623-632(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=2180;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Methanothermus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Methanothermus fervidus
Archaea; Euryarchaeota;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-APR-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-20309698; PubMed-10850983;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FUNCTION
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CATALYTIC ACTIVITY: ATP + AMP - ADP + ADP.

SIMILARITY: BELONGS TO THE ADENYLATE KINASE FAMILY.
                                                                                                                                                NAD(P)H.
CATALYTIC
   SUBCELLULAR LOCATION:
SIMILARITY: BELONGS TO
                                                                           SUBUNIT: Homodimer
                                                                                                          NAD(P)H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KKLSECLKRIGDELD
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       TO
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                                                                                                                                            (R)-sulfolactate
   Cytoplasmic DHE LDH2/MI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43; DB 1
Pred. No. 8.6;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
   LDH2/MDH2
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       OXDIDOREDUCTASE FAMILY
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Best Local S
Matches 10
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P55937;
01-NOV-1997 (Rel.
01-NOV-1997 (Rel.
15-DEC-1998 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LT 12
_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PIR; S08689; S08689.

PIR; S08981; S08981.

InterPro; IPR003767; Idh_2.

Pfam; PF02615; Idh_2; 1.

Oxidoreductase; Tricarboxylic acid cycle; NAD; NADP.
SEQUENCE 339 AA; 36762 MW; 2319D822D8275835 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                       DNA Seq. 7:71-82(1997).
-!- FUNCTION: MAY PLAY AN IMPORTANT ROLE IN SPERMATOGENESIS AND/OR TESTIS DEVELOPMENT. PROBABLY IDENTICAL WITH THE SEROLOGICALLY ".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This
                                                                                           entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                              autoantigen.";
DNA Seq. 7:71-82(1997).
                                                                                                                                                                                                                                                                                                                                                                                             male-enhanced antigen-2 (Mea-2): a putative
                                                                                                                                                                                                                                                                                                                                                                                                  "Cloning and molecular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
MCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Golgin-160 (Male-enhanced GOLGA3 OR MEA2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X51714; CAA36010.1; EMBL; X51840; CAA36133.1;
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 Spermatogenesis; Developmental protein DOMAIN 201 204 POLY-ALA.
                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-97217683;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A
                                 MGD; MGI:96958; Golga3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 KKLSECLKRIGDELD 15
                                                                                                                                                                                                                                                                                TESTIS DEVELOPMENT. PROBABLY IDENTICAL WITH THE DETECTABLE MALE ANTIGEN (SDM).
TISSUE SPECIFICITY: HIGHLY EXPRESSED IN TESTIS.
FOUND IN SPERMATIDS DURING SPERMATOGENESIS. NO
                                                                                                                                                                                                                                    SIMILARITY: HIGH, CAUTION: IT IS UN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SWISS-PROT entry is copyright. It is produced through a collaboration seen the Swiss Institute of Bioinformatics and the EMBL outstation suropean Bioinformatics Institute. There are no restrictions on its
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                                             D78270; BAA19612.1;
P18852; 1SCG.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     35,
37,
                                                                                                                                                                                                                                    SPERMATOGONIA, OR SPERMATOCYTES.
IGH, TO HUMAN GOLGIN-160.
S UNCERTAIN WHETHER MET-1, MET-19 OR
                                                                                                                                                                                                                                                                                                                                                                                                                                              PubMed=9063644;
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Last sequence update)
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                                                                                                                                                                                                                                                                                                                                                                                                              characterization
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
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tive family of the
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         RA Van der Schueren J., Grymonprez B., Chuang Y.-J., Vandenbussche F., RA Braeken M., Weltjens I., Voet M., Bastiaens I., Aert R., Defoor E., RA Braeken M., Weltjens I., Voet M., Bastiaens I., Aert R., Defoor E., RA Braeken M., Weltjens I., Voet M., Bastiaens I., Aert R., Defoor E., RA Braeken M., Weltsew J., Chuang Y.-J., Vandenbussche F., RA Holzer E., Brandt A., Peters S., van Staveren M., Dirkse W., RA Berneiser S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H., RA Berneiser S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H., RA Berneiser S., Hempel S., Feldpausch M., Lamberth S., Van den Daele H., RA Bertett A., Rajandream M.A., Lyne M., Lennard N., McLay K., Mayes R., Van Montagu M., Rogers J., Cronin A., Quall M., Bray-Allen S., RA Clark L., Doggett J., Hall S., Kay M., Lennard N., McLay K., Mayes R., RA Borkova D., Bloecker H., Scharfe M., Grimm M., Loehnert T.-H., Dose S., de Haann M., Maarse A.C., Schaefer M., Mueller-Auer S., RA Gabel C., Fuchs M., Fartmann B., Granderath K., Dauner D., Herzl A., Ra Borkova D., Bloecker H., Schmidt W., Lecharny A., Aubourg S., RA Massent O., Quigley F., Clabauld G., Muendlein A., Felber R., RA Massent O., Quigley F., Clabauld G., Muendlein A., Felber R., RA Cheffor F., Cooke R., Berger C., Monfort A., Casacuberta E., Ra Heijnen J., Purnelle B., Bent E., Johnson S., Tacon D., Jesse T., RA Heijnen D., Haase D., Lemake K., Mewes H.-W., Stocker S., Ra Heijnen D., Haase D., Lemake K., Mewes H.-W., Stocker S., Ra Frishman D., Haase D., Lemake K., Mewes H.-W., Stocker S., Ra Ra Latreille P., Coutney L., Cloud J., Abbott A., Scott K., Johnson D., Ra Allari J., Berghoff A., Jones K., Dante M., Papin K., Hillier L., Ra Ra Kramer J., Berghoff A., Jones K., Drone K., Cotton M., Joshu C., Ra Antonoiu B., Zidanic M., Strong C., Sun H., Lamar B., Yordan C., Ra Raby J., Berghoff A., Ra Korner B., Yordan C., Ra Raby J., Rodriguez M., Hoffman J., Till S., Shah R., Ra Chaff E., Marra M., Mattols R., Shah R., Bandel A., Loch R., Strong C., Sun H., Lamar B., Yordan C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
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Best Local
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Cytochrome P450 71A27 (BC 1.14--).

Cyp71A27 OR AT4G20240 OR FIC12.160.

Arabidopsis thaliana (Mouse-ear cress).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Kreis M., Delseu, .... Reichert B., Portetelle D., Perez-Alonso m., Wedler H., Ridley P., Vos P., Hoheisel J., Zimmermann W., Wedler H., Ridley P., Langham S.-A., McCullagh B., Bilham L., Robben J., Vandenbussche B., Chuang Y.-J., Vandenbussche B., Chuang Y.-J., Vandenbussche B., Chuang Y.-J., Aert R., Defoor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Harris B., Ansorge W., Brandt P., Grivell L.A., Rieger M., Weichselgartner M., de Simone V., Obermaler B., Mache R., I Kreis M., Delseny M., Puigdomenech P., Watson M., Schmidth Reichert B., Portetelle D., Perez-Alonso N., Boutry M., Ba
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mayer K.F.X.,
Pohl T., Duest
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C71R_ARATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=20083488; PubMed=10617198;
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T., Duesterhoeft A., Stiekema W., Entlan K.-D., Terryn N.,
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D., Jesse T.,
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01-NOV-1997
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                                                                                                                                      STRAIN-JAL-1 / DSM 2661 / ATCC 43067;

MEDLINE-96337999; PubMed-8880887;

Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,

Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,

Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reich C.I.,

Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,

Scott J.L., Geoghagen N.S.M., Weidman J.F., Fuhrmann J.L., Nguyen D.,

Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,

Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,

Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;

"Complete genome sequence of the methanogenic archaeon, Methanococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
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PRINTS; PR00385; P450,
PROSITE; PS00086; CYTOCHROME_P450; 1.
OXIdoreductase; Monooxygenase; Transmembrane; Heme;
OXIDOREDUCTASE; MONOOXYGENASE; TRANSMEMBRANE; Heme;
POTENTIAL.
HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Science 273:1058-1073(1996).
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Y380_METJA
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EMBL; AL161552; CAB79024.1; ALT_FRAME.
InterPro; IPR001128; Cyt_P450.
Pfam, PF00057; P450; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sb.ch/announce/or send an email to license@isb-sb.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nature
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
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thaliana."
                                                                                                                  jannaschii
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SWISS-PROT entry is copyright.
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(Rel. 40, Last ann
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Q57560;
Q1-NOV-1997
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16-OCT-2001
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Bult C.J., White O., Olsen G.J., Zhou L., Fleischmann R.D.,
Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
Sutton G.G., Blake J.A., FitzGerald L.M., Clayton R.A., Gocayne J.D.,
Kerlavage A.R., Dougherty B.A., Tomb J.-F., Adams M.D., Reich C.I.,
Overbeek R., Kirkness E.F., Weinstock K.G., Merrick J.M., Glodek A.,
Scott J.L., Geoghagen N.S.M., Weidman J.E., Fuhrmann J.L., Nguyen D.,
Utterback T.R., Kelley J.M., Peterson J.D., Sadow P.W., Hanna M.C.,
Cotton M.D., Roberts K.M., Hurst M.A., Kaine B.P., Borodovsky M.,
Klenk H.-P., Fraser C.M., Smith H.O., Woese C.R., Venter J.C.;
"Complete genome sequence of the methanogenic archaeon, Methanococcus
jannaschil."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                    EMBL; U67467; AAB98086.1; -.
TIGR; MJ0095; -.
Hypothetical protein; Comple:
SEQUENCE 126 AA; 14709 MW
                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL: U67491; AAB98377.1; -.
TIGR: MJ0380; -.
Hypothetical protein; Comple
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Science 273:1058-1073(1996).
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(Rel. 40,
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Search completed: September 20, 2002, 11:04:34 Job time: 1631 sec

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Title:
Perfect score:
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Listing first 45 summaries
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1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
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81
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Gapop 10.0 , Gapext 0.5
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sp_rodent:*
sp_virus:*
sp_vertebrate:*
sp_unclassified:*
sp_tricus:*
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sp_phage:*
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sp_mammal:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result	Score	Query	Length	BG	Ħ	Description
1	81	100.0	149	6	Q9GMG7	Q9gmg7 ovis aries
N	81	100.0	164	4	90006	Q9uqd6 homo sai
ω	18	100.0	179	4	Q9NYG7	Q9nyq7 homo sai
4	75	92.6	173	11	Q9JKL3	Q9jkl3 rattus nor
ъ	69	85.2	221	13	Q98U13	
6	60	74.1	192	13	Q919N4	Q9i9n4 brachydanio
7	51	63.0	1124	12	Q9DVW1	Q9dvw1 plutella
œ	49	60.5	669	17	Q97U18	æ
9	46	56.8	485	11	Q99KZ6	Q99kz6 mus muscul
10	45	55.6	508	17	Q979F5	-
11	45	55.6	2376	10	Q9FIN7	-
12	44	54.3	226	11	Q9CVN5	Q9cvn5 mus muscul
13	44	54.3	303	11	Q9D9D5	Q9d9d5 mus muscul
14	43	53.1	72	15	09YRQ6	Q9yrg6 human immu
15	43	53.1	92	16	Q9ZKI7	Q9zki7 helicobacte
16	43	53.1	169	N	P95332	SUCCESSOR CEESED

	45	44	43	42	41	40	39	38	37	36	35	34	33	32	3 <u>1</u>	30	29	28	27	26	25	24	23	22	21	20	19	18	17
	40	40	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	42	42	42	42	42	42	42.5	42.5	43	43	43	43
	49.4	49.4	50.6	•	•		50.6	٠	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	50.6	51.9	51.9	51.9	•	51.9		•	•	•	•	53.1	53.1
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		Q93sk2 myxococcus	Q9xze3 amoeba prot	Q22554 caenorhabdi	_	Q9h9n3 homo sapien	Q98js1 rhizobium l		Q96w83 gibberella	Q96w90 gibberella				-	Q95v94 anopheles s	legio		Q9qyt3 mus musculu	Q9qyt2 mus musculu	Q9x878 streptomyce	P96145 uncultured	Q9frd2 oryza sativ	Q91tk5 tupaia herp	Q97ln4 clostridium	Q97cl1 thermoplasm	Q973t7 sulfolobus	Q9jgp5 epizootic h	Q9v608 drosophila	O58748 pyrococcus

## ALIGNMENTS

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1 KKLSECLKRIGDELDS 16	Query Match 100.0%; Score 81; DB 6; Length 149; Best Local Similarity 100.0%; Pred. No. 2e-05; Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	NON TER 149 149 SEQUENCE 149 AA; 16917 MW; ABC10CBE5C64EA2D CRC64;	. 1		SMART; SM00337; BCL; 1. PROSITE: PS50062: BCL2 FAMILY: 1.		Interpro; IPR000712; Bc1_2.		EMBL; AF163774; AAF98242.1;	Submitted (JUN-1999) to the EMBL/GenBank/DDBJ databases.	ovary.";	Murray J.F., Dong Y.B., Leigh A.J., Scaramuzzi R.J., Carter N.D.;	TISSUE-OVARY;	SEQUENCE FROM N.A.	[1]				CVID GILLED (SHEEP).  Eukarvota: Metazoa: Chordata: Craniata: Vertebrata: Euteleostomi:	DEAT. OFFICE OFFICE OF THE OFFICE OFF	BCL2-ASSOCIATED PROTEIN BAX (FRAGMENT).	19,	(TrEMBLrel. 16,	2001 (TrEMBLrel.		O9GMG7 PRELIMINARY: PRT: 149 AA.	LT 1 G7	

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KKLSECLKRIGDELDS

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RESULT
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MEDLINE-99120940; PubMed-9920818;
Shi B., Triebe D., Kajiji S., Iwata K.K., Bruskin A., I'allian and Characterization of baxepsilon, a I'allian and Italian and Characterization of baxepsilon, a Variant missing the BH2 and the transmembrane domains. Blochem. Biophys. Res. Commun. 254:779-785(1999).
EMBL; AF007826; AAD22706.1; -
EMBL; AF007826; AAD22706.1; -
InterPro; IPR0002475; BCL2_family.
InterPro; IPR000217; BCL2_family.
InterPro; IPR000217; BCL2_family.
SMART; SM00337; BCL; 1.
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EMBL; AF247393; AAF71267.1;
HSSP; Q07817; 1MAZ.
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MEDLINE-20237095; PubMed-10772918;
Schmitt E., Paquet C., Beauchemin M., D
"Characterization of bax-sigma, a cell
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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InterPro; IPR002475; BCL2_family.
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Q9JKL3;
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SEQUENCE
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
BAX PROTEIN SPLICE VARIANT K.
                                                             SEQUENCE FROM N.A.

MEDLINE-21107661; PubMed-11158585;

Finklelstein C.V., Lewellyn A.L., Maller J.L.;

"The midblastula transition in Xenopus embryos activates m
pathways to prevent apoptosis in response to DNA damage.";

Proc. Natl. Acad. Sci. U.S.A. 98:1006-1011(2001).

EMBL; AF288809; AAK06406.1; ".

HSSP, P53563; IAF3.
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InterPro; IPR000712; BCL_2.
Pfam; PF00452; BCL-2; 1.
SMART; SM00337; BCL; 1.
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Amphibia; Batrachia; Anura;
Xenopodinae; Xenopus.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
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                      InterPro; IPR002475; BCL2_family.
InterPro; IPR000712; Bcl_2.
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pred. No. 0.00022;
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Pred. No. 2.5e-05;
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EMBL; AF31015; AAF66960.1; -.
HSSP; P53563; 1AF3.
InterPro; IPR002475; BCL2_family.
InterPro; IPR00712; BCL2.
Pfam; PF00452; BGL2.5;
PSMART; SM00377; BCL; 1.
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HEDLING-20455581; PubMed-10998336;
HEDLING-20455581; PubMed-10998336;
Hashimoto Y., Hayakawa T., Ueno Y., Fujita T.,
"Sequence analysis of the Plutella xylostella g
Virology 275:358-372(2000).
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Actinopterygii; Neopterygii
Cypriniformes; Cyprinidae;
NCBI_TaxID=7955;
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PROSITE; PS50062; BCL2_FAMILY;
SEQUENCE 221 AA; 24251 MW;
                                                                                                                                                                                    SEQUENCE FROM N.A
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[1]
                                                                                                                                                                                                                                                                  Plutella xylostella gra
Viruses; dsDNA viruses,
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zoa; Chordata; Craniata;
Neopterygii; Teleostei;
Cyprinidae; Danio.
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36DBA2E2240793FA CRC64;
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ei; Euteleostei;
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InterPro; IPR00290; Serthr_pkinase.
InterPro; IPR001240; TPR.
InterPro; IPR001245; Tyr_pkinase.
Pfam; PF00069; pkinase; 1.
SMART; SM00220; S_TKc; 1.
SMART; SM00208; TPR; 1.
SMART; SM00219; TyrKc; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
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SEQUENCE 669 AA; 77369 MW; BE0FADD77
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MEDLINE-2133296; PubMed-1142//20,
She Q., Singh R.K., Confalonieri F., Zivanovic Y., Allert She Q., Singh R.K., Confalonieri F., Clausen I.G., Curtis B.A.,
De Moors A., Erauso G., Fletcher C., Gordon P.M.K.,
De Moors A., Erauso G., Fletcher C., Gordon P.M.K.,
Heikamp-de Jong I., Jeffries A.C., Kozera C.J., Medina N., Pen-
Thi-Ngoc H.P., Redder P., Schenk M.E., Theriault C., Tolstrup
Charlebois R.L., Doolittle W.F., Duguet M., Gaasterland T.,
Charlebois R.L., Bensen C.W., Van der Oost J.;
Therit R.A., Ragan M.A., Sensen C.W., Van der Oost J.;
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O99KZ6: O1-JUN-2001 (TrEMBLrel. 17, Created)
O1-JUN-2001 (TrEMBLrel. 17, Last sequence update)
O1-DEC-2001 (TrEMBLrel. 19, Last annotation updat
SIMILAR TO ZINC FINGER PROTEIN ANC_2H01.
Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The complete genome of the crenarchaeon Sulfolob Proc. Natl. Acad. Sci. U.S.A. 98:7835-7840(2001). EMBL: AE006909; AAK43304.1; -. InterPro; IPR000719; Euk_pkinase.
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Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Rodentia; NCBI_TaxID=10090;
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PubMed-11427726;
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8E0FADD7739F0888 CRC64;
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0979F5;
01-OCT-2001 (Tremblrel 18, C
01-OCT-2001 (Tremblrel 19, L
01-DCC-2001 (Tremblrel 19, L
DNA-DIRECTED RNA POLYMERASE A
TVG1233699.
OPFIN7 PRELIMINARY; PRT; 2376 AA.

OPFIN7: OPFIN7: 01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
01-MAR-2001 (TrEMBLRE). 15, Last annotation update)
GENOMIC DNA, CHROMOSOME 5, TAC CLONE: K16H17.
Arabidopsis thallana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kawashima T., Amano N., Kolke H., Makino S.-I., Higuchi S. Kawashima T., Amano N., Kolke H., Makino S.-I., Higuchi S. Kawashima-Ohya Y., Watanabe K., Yamazaki H., Kanehori K., Nunoshiba T., Yamamoto Y., Aramaki H., Makino K., Suzuki M. Archaeal adaptation to higher temperatures revealed by ge sequence of Thermoplasma volcanium."; proc. Natl: Acad. Sci. U.S.A. 97:14257-14262(2000). EMBL: AP000995; BAB60348.1; ... InterPro: IPR002899; RNA_pol_A2. Pfam; PF01854; RNA_pol_A2. ... Complete proteome. SCQUENCE 508 AA; 56949 MW; OB17ABCBFE0118FE CRC64;
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InterPro; IPR000822; Znf-C2H2.
Pfam; PF00096; Zf-C2H2; 9.
SMART; SM00355; ZnF-C2H2; 9.
SMART; SM00355; ZnF-C2H2; 9.
PROSITE; PS00028; ZINC_FINGER_C2H2_1: 4.
PROSITE; PS00028; ZINC_FINGER_C2H2_2; 5.
DNA-binding; Metal-binding; Zinc-finger.
DNA-binding; Metal-binding; Zinc-finger.
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STRAIN-CSS1 / DSM 4299 / JCM 9571;
MEDLINE-20570466; Pubmed-11121031;
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SEQUENCE FROM N.A.
TISSUE~MAMMARY TUMOR.
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RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
RA Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
RA Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
RA Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Schriml K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
RA Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
RA Brownstein M.J., Bult C., Fletcher C., Fylita M., Gariboldi M.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamyya M., Lee N.H.,
RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamyya M., Lee N.H.,
RA Kordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
RA Sasaki H., Sato K., Wang K.H., Weitz C., Whittaker C., Wilming L.,
RA Hayvashtzaki Y.,
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09CVN5;
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01-JUN-2001 (TrEMBLrel. 17, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
1700095F04RIK PROTEIN (FRAGMENT).
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STRAIN-C57BL/6J; TISSUE-TESTIS;
MEDLINE-21085660; PubMed-11217851;
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MGD; MGI:1914606;
NON_TER 226
SEQUENCE 226 AA;
                                                                            EMBL;
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Eukaryota; Metazoa;
Mammalia; Eutheria;
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                                                                            "Functional annotation of a full-length Nature 409:685-690(2001).
EMBL: AK007251: BAB24916.1:
                                                                                                         Nature
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Metazoa; Chordata; C
Metazoa; Rodentia; S
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RA Aito T., Okazaki Y., Gojobori T., Bono H., Rasukawa T., Saito R.,
RA Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
RA Fleischmann W., Gaasterland T., Gissi C., King B., Kochiwa H.,
RA Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
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RA Kuehl R., Catubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
RA Sakai K., Okido T., Fruuno M., Aono H., Baldarelli R., Barsh G.,
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RA Biake J., Bojinga N., Carninci P., de Bonaldo M.F.,
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RA Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
RA Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
RA Mordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
RA Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
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Mus musculus (Mouse).
Metazoa; Chordata;
"harta; Rodentia;
                                                                                                                                                               Human immunodeficiency virus type 1. Viruses; Retroid viruses; Retroviridae; NCBI_TaxID-11676;
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Nature 409:685-690(2001).
EMBL; AK007078; BAB24853.1; -.
MGD; MGI:1914666; I700095F04Rik.
SEQUENCE 303 AA; 35853 MW; D4AA395ZB5C10586 CRC64;
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EMBL; AF098079; AAD09895.1;
InterPro; IPR000777; GP120.
Pfam; PF00516; GP120; 1.
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"HIV type 1 V3 domain serotyping and genotyping in Gauteng,
"HIV type 1 V3 domain serotyping and western Cape Provinces of South
                                                                                                                                                                                                                                       "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
EMBL; AE001524; AAD06526:1; -.
                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

MEDLINE-99120557; PubMed-9923682;

MEDLINE-99120557; PubMed-9923682;

Alm R.A., Ling L.S.L., Moir D.T., King B.L., Brown E.D.,

Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.

Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., IV

Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E.,

Trust T.J.;
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Africa.";
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58
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                     1 KKLSECLKRIGDELD
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8; Conser
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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Result		erv %			COMMINALES	<del>-</del> .,
No.	Score	Match	Match Length DB	DB	ID	Description
ב	85	100.0	17	21	AAB37057	Bcl2 polypeptide B
N	80	94,1	16	20	AAY05423	Human BAK BH3 doma
ω	80	94.1	16	21	AAB37030	Bcl2 polypeptide B
4	80	94.1	16	22	AAB71977	Bak BH3 peptide.
υ	80	94.1	26	21	AAY96322	Mammalian Bak Bcl-
σ	80	94.1	26	22	AAB70372	BAK BH3 consensus
7	80	94.1	27	21	AAB37004	Bcl2 polypeptide B
89	80	94.1	28	17	AAW06294	GD domain region f
9	90	94.1	117	19	AAW79535	Truncated Bak poly
10	80	94.1	141	16	AAR77880	Human Cdn-1(71-211
11	80	94.1	152	16	AAR77879	Human Cdn-1(60-211

45	44	43	42	41	40	39	38	37	36	35	34	ω u	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	
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336	327	320	315	258	426	426	221	842	834	195	165	15	357	329	322	210	182	175	15	15	31	16	208	27	16	16	211	211	211	211	211	211	211	
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AAG11785	AAG43888	AAG43889	AAG11786	AAG55036	AAU35883	AAU35705	64	AAU38125	AAU34483	AAB85667	AAB85668	AAB85674	AAG43237	AAG43238	AAG43239	AAG08498	AAG08499	AAG08500	AAB85172	AAW06302	AAW06295	AAB37058	AAY05432	ААВ37005	AAB37031	AAY05424	AAY05433	AAW79534	AAR81451	AAW03669	AAW03668	AAR77877	AAR77876	
					Helicobacter pylor	Helicobacter pylor	S. epidermidis ope	Salmonella typhi c	E. coli cellular p		Bc1-2						Arabidopsis thalia		$\sim$	on	GD domain region f	polypeptide	BAK	Bcl2 polypeptide B	polypeptide	Mouse BAK BH3 doma	Human BAK protein	Bak polypeptide.	Bcl-Y apoptosis-re	Bak-2 protein. Ho	Bak protein. Homo	Cdn-2.	Human Cdn-1. Homo	

## ALIGNMENTS

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Bc12 polypeptide BH3 domain peptide #57.
                                                                                                                  AAB37057 standard; peptide; 17
                                                                              AAB37057;
                                       28-FEB-2001 (first entry)
                                                                                                                    A
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Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.

RESULT
AAB37057
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XX AAB WPI; 2000-679325/66. 07-APR-1999; 99US-0128202. 06-APR-2000; 2000WO-US09352. WO200059526-A1 Huang Z, 12-OCT-2000 (UYJE-) UNIV JEFFERSON THOMAS Homo sapiens. Wang J, Zhang Z, Shan ß 'nŢ 2;

New peptide conjugates

for modulating apoptosis or

for inhibiting

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CC The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached con the N-terminus of the peptide, or a side chain of the peptide where ct the functional group of the side chain is NH2 or OH; or X = O or NH,

CC when the R-X group is attached to the C-terminus of the peptide, or a consider chain of the peptide where con two double bonds, cyclobutyl, cyclopentyl, cyclohexyl containing one cor two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally consubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AB37001 = B37058 represent examples cof the peptide portion of the conjugate. The peptides represent analogues of the BH3 domain of the cell death agonist Bad. The peptide conjugate is captured for modulating apoptosis in the cells of a subject, or for creversing B cell lymphoma/leukemia 2 (Bcl-2) imediated blockage of captured with a cancer characterized by cancer cells that cancer characterized by cancer cells that cancer characterized by cancer cells that cancer characterized by cancer cells that or conjugate is also useful for inhibiting Bcl-2 conjugate is also useful for treating a caute or chronic lymphocytic and non-lymphocytic leukemia. The peptide conjugate is action and peptide conjugate is set of conjugate is also useful for treating accomplisate is also useful for treating disorders characterized by increased apoptosis, e.g. neurodegenerative disorders, acquired conjugate is also useful for captired being approach to the cancer characterized by cancer cells infarction.
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Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                    BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition; arthritis; autoimmune disease; therapy.
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                                                                                                                              07-OCT-1997;
26-SEP-1997;
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                                Korsmeyer SJ
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                                                                                                                                                                                                                                                                                                                                                             Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; stroke; myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents the BH3 domain of human BAK. The invention relates to a bcl homology domain 3 (BH3 domain), derived from a proapoptotic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
                                                                             Claim 18;
                                                                                                   New peptide conjugates for modulating apoptosis or for inhibiting cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                 Huang 2,
                                                                                                                                                                                                                                    07-APR-1999;
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16; Conserv
                                                                                                                                                                                 Wang
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The invention relates to a peptide conjugate having the formula: (R-X), D peptide where n=1-10; X=C=0, when the R-X group is att to the N-terminus of the peptide, or a side chain of the peptide the functional group of the side chain is NH2 or OH; or X=0 or when the R-X group is attached to the C-terminus of the peptide,

attached

where

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Best Local Similarity
The present sequence was used in an example illustrating an invention relating to an antimycin derivative which modulates apoptosis by binding to a Bcl-2 family protein and preferentially induces apoptosis in a cell which over-expresses the Bcl-2 family protein. The antimycin derivative is used in treating an apoptosis-associated disease and for inducing apoptosis. It is also useful for treating neoplasia and drug
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                                                                                                                                                                                                                                                                                                                                           antimycin derivatives that bind to antiapoptotic Bcl-2 family in, useful for modulating the apoptotic state of a cell -
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RESULT
AAY96322
ID AAY96322
ID AAY96322
ID AAY96322
AC AAY9
AC AAY9
AX IT-2
XX Mamm
KW Mapor
XX MAMM
PD 11-1
YX W021
XX IL-1
YX 02-1
YX WPI
XX WPI
XX WPI
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XX WPI
XX WPI
XX WPI
XX ROS-1
PT MOO!
PT Autro-1
Y AV WPI
XX WPI
XX WPI
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XX WPI
XX CC (BH
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CC dea
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Best Local
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Best Local :
                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          resistance. The present sequence binds to the hydrophobic pocket of Bcl-2. A competitive binding assay was used to determine if the site of antimycin A3 interaction was the hydrophobic pocket of Bcl-2.
                                                                                                                                                          The present sequence is the mammalian Bak Bcl-2 homology domain 3 (BH3) domain, which was used in a sequence alignment with the same domain of a putative version of the mammalian apoptosis regulator BBC3, which was designated BBC3-ORF2. The BBC3 protein, nucleic acids and antibodies are suitable for use in promoting cell death or for preventing apoptosis in malignant cells and those causes.
                                                                                                                                                                                                                                                                                    Novel polynucleotide encoding a BBC3 protein which is useful for modulating apoptosis, especially in the treatment of cancer and autoimmune diseases .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mammal; apoptosis; cell death; BBC3; apoptosis promotion; apoptosis inhibition; malignant cell; autoimmune disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17-AUG-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY96322 standard; Peptide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                       Disclosure; Fig 4; 47pp; English.
                                                                                                                                                                                                                                                                                   autoimmune
                                                                                                                                                                                                                                                                                                                                       WPI; 2000-365560/31.
                                                                                                                                                                                                                                                                                                                                                                Zhu L,
                                                                                                                                                                                                                                                                                                                                                                                                                      02-NOV-1998;
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                                                                                                                      Sequence
                                                                                                                                                 autoimmune
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Local Similarity 100.0%;
nes 16; Conservative (
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gqvgrqlaiigddinr
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                                                                                                                                                                                                                                                                                                                                                                  Chittenden T;
                                                                 94.18;
                                                       0;
                                                                 Score 80;
; Pred. No.
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                                                       Mismatches
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1.4e-07;
                                                                 DB 21;
2.4e-07;
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causing
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RESULT
AAB37004
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                                                                                                                                                                                                                                                                                  The present invention describes an isolated or synthetic polypeptide (C) comprising a less than full length amino acid sequence of a mutant C Bcl-XL/Bcl-2 associated cell death regulator polypeptide (BAD) or its C fragment, which contains amino acid substitutions at Seril8 of a human RAD, SeriS5 of a murine BAD) (longer murine BAD) or Seril3 of a murine BAD). (I) has immunostimulant, neuroprotective, CC nootropic, antlischaemic, vulnerary, cytostatic, antiviral, and c can be used as an apoptosis inducer or inhibitor. BAD polypeptides and CC polynucleotides can be used for screening candidate compounds and drugs for activity that promote cell survival or apoptosis. Other uses include C inducing or inhibiting apoptosis in a cell. Candidate compounds and drugs (dentified and (mutant) BAD polypeptides are useful in treating immunodeficiency diseases, neurodegenerative diseases, ischaemic cell ymphoproliferative conditions, arthritis, infertility, inflammation and cutcimmune diseases. The present sequence represents a Bcl-family member BH3 domain consensus sequence which is used in an example from the
                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New mutant Bcl-XL/Bcl-2 Associated Cell Death Regulator polypeptide, useful for screening for candidate compounds which induce or inhibit apoptosis, comprises amino acid substitutions at Seril8, Seri55 or Seri13 -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bcl-XL/Bcl-2 associated cell death regulator; BAD; mutant; apoptosis; immunostimulant; neuroprotective; nootropic; antiischaemic; vulnerary; cytostatic; antiviral; antiarthrito; antiviral; antiarthrito; antiviral; antiarthrito; antiviral; antiarthrito; cantingiamancory; wound healing; immunosuppressive; apoptosis inducer; apoptosis inhibitor; cancer; immunodeficiency disease; neurodegenerative disease; viral infection; ischaemic cell death; areprission cell death; areprission cell death; areprission; autoimmune disease.
                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 2; Fig 3a; 157pp; English.
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                                                                                                           GOVGRQLAIIGDDINR 17
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                                                                      APOPTOSIS TECHNOLOGY INC
                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                       26
                                                                                                                                              Conservative
                                                                                                                                                                                                                                       ξ.
                                                                                                                                                               94.1%; Score 80;
100.0%; Pred. No.
                                                                                                                                               0;
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                                                                                                                                              ore 80; DB 22; red. No. 2.4e-07; Mismatches 0;
                                                                                                                                                                               Length 26;
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GOVGROLATIGDDINR 17

Matches

Similarity

94.18; 100.08;

Score 80; Pred. No.

DB 21; 2.5e-07;

Length 27

Conservative

0,

Mismatches

0;

Gaps

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The invention relates to a peptide conjugate having the formula:

CC (R-X)n-peptide where n = 1-10; X = C-0, when the R-X group is attached CC to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH; CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide where the side chain functional group is COOH CC or two double bonds, cyclobutyl, cyclopentyl, cyclobaxyl optionally monosubstituted with a 1-5C straight or branched chain of the peptide where the group is COOH CC phenyl optionally monosubstituted with a 1-5C straight or branched chain alkyl group, co for two double portion of the peptides AB37001-B3705B represent examples CC of the peptide portion of the conjugate. The peptides represent analogues of a Bcl-2 superfamily polypeptide corresponding to amino acids 72-97 of CC the BH3 domain of the cells death agonist Bad. The peptide conjugate is useful for modulating apoptosis in the cells of a subject, or for CC apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 CC function. In particular, the peptide conjugate is useful for treating a subject afflicted with a cancer characterized by cancer cells that conjugate is also useful for inhibiting Bcl-2. The cancer includes prostate, colorectal, gastric, constant proposals, e.g. neurodegenerative disorders, acquired by immunodeficiency syndrome (AIDS), stroke or myocardial infarction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cencer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Huang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYJE-)
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Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               peptide conjugates for modulating apoptosis or for inhibiting lymphoma/leukemia 2 (Bcl-2) function, especially useful for ating neurodegenerative disorders, stroke, or cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2,
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27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              English.
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RESULT
AAW79535
ID AAW7
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AC AAW7
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Best Local :
                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                            capable of mimicking its structure and/or function. The present sequence represents a GD domain corresponding to amino acid residues 67-94 of Bak. An antibody raised against a GD domain may be used to screen a cDNA expression library for clones comprising cDNA inserts encoding immunocrossreactive proteins. Truncated GD domain meptides have been shown to maintain the protein binding and cell killing function exhibited by wild type Bak. These molecules may induce apoptosis in tumour cell. These peptides act independently of p53 status. Bak or GD domain mimetics that inhibit Bcl-2 may be selectively toxic to certain tumours, e.g. follicular lymphoma, which depend on high levels of Bcl-2 for their continued growth and survival. GD domain mimetics may also be used for combatting viral infections by causing apoptosis of infected cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                               The term GD domain refers to a protein domain first identified in Bak and shown to be essential for the interaction of Bak with Bcl-x(L) and for Bak's cell killing function; and to peptides and/or molecules capable of mimicking its structure and/or function. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GD domain region for Bak amino acid residues 67-94.
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  11-JAN-1999
                             AAW79535;
                                                      AAW79535
                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 2; Page 52; 69pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide(s)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1996-518805/51.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12-MAY-1995;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Apoptosis;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ide(s) comprising GD domains - have similar activities to wild pak, and cause cellular apoptosis for treatment of viral
                                                                                                                          ggvgrqlaiigddinr
                                                                                                                                                     GOVGROLATIGDDINR 17
                                                                                                                                                                                 l Similarity
16; Conserv
                                                        standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              follicular lymphoma; tumour; p53; antibody
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                                                                                                                                                                                 Conservative
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                                                        Protein;
                                                                                                                                                                                             94.1%;
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                                                                                                                                                                                 0
                                                                                                                                                                                            Score 80;
Pred. No.
                                                        8
                                                                                                                                                                                 Mismatches
                                                                                                                                                                                             DB 17; I
2.6e-07;
                                                                                                                                                                                                         Length 28;
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RESULT 1
AAR77880
ID AAR7
XX AAR7
AC AAR7
DT 21-N
XX Huma
XX Cdn-
KW Cdn-
KW autc
KW shoc
XX Homc
XX Homc
XX Homc
XX WO95
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Best Local
                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                 This is the amino acid sequence of Bak-delta2-TM, a truncated polypeptide comprising amino acids 71-187 of Bak (see AAW79534). A nucleotide sequence encoding Bak-delta2-TM was obtained from cDNA by PCR and cloned as an in-frame fusion to the GAL4-DNA binding domain in vector pAS2-1. The construct was used in a two-hybrid screen of human heart cDNA for the identification of clones encoding Bak binding proteins. The invention relates to a novel Bak binding protein (BBP, see AAW79537), the gene encoding (see AAV61499), methods for detecting substances that alter the specific binding between Bak and BBP, as well as diagnostic and therapeutic methods utilising BBP.
                                                                 Cdn-1; apoptosis modulator; adoptive immunotherapy; therapy; HIV
autoimmune disease; reperfusion injury; hepatitis, osteoporosis;
shock; lymphoma; eczema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New Bak-binding protein and related nucleic acid, vectors, transformed cells and antibodies - are useful for modulation of apoptosis in cancer, neuro-degeneration etc., also peptide fragments
                                                                                                                           Human Cdn-1(71-211).
                                                                                                                                                       21-NOV-1995
                                                                                                                                                                                  AAR77880;
                                                                                                                                                                                                            AAR77880 standard; Protein; 141 AA
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 1; Page 53; 77pp; English.
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20-MAR-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Truncated Bak polypeptide Bak-delta2-TM
             W09515084-A
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16; Conserv
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97US-0041328.
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100.08; Pr
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Pred. No.
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1.3e-06;
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heart disease;
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Best Local Similarity 100
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell survival in response to anti-Fas-mediated apoptosis. Deletion of the N-terminal 70 amino acids of Cdn-1 improved this activity, suggesting that small, truncated Cdn-1 molecules may be potent therapeutics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New nucleic acid sequences encoding Cdn apoptosis modulators - and related vectors, transformed cells, proteins and antibodies, useful or diagnosis and treatment e.g. of HIV infection, reperfusion injur
         etc.
                   New nucleic acid sequences encoding Cdn apoptosis modulators - and related vectors, transformed cells, proteins and antibodies, useful or diagnosis and treatment e.g. of HIV infection, reperfusion injury
                                                                                                                        07-OCT-1994;
30-NOV-1993;
                                                                                                                                                                                                                                         shock; lymphoma; eczema
                                                                                                                                                                                                                                                   Cdn-1; apoptosis modulator; adoptive immunotherapy; therapy; HIV; autoimmune disease; reperfusion injury; hepatitis, osteoporosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
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30-NOV-1993;
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                                                             WPT; 1995-215106/28.
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                                                                                                                                                                                                                                                                                  Human Cdn-1(60-211).
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                                                                                 Kiefer MC;
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93US-0160067.
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93US-0160067.
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                                                                                     Cdn-1 cDNA was isolated from a human heart cDNA library using a previously isolated clone as probe. Recombinant Cdn-I was produced in Sf9 and human colon adenocarcinoma HT29 cells. Expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell survival in response to anti-Fas-mediated apoptosis.
                                                                                                                                                                                                  New nucleic acid sequences encoding Cdn apoptosis modulators - and related vectors, transformed cells, proteins and antibodies, useful or diagnosis and treatment e.g. of HIV infection, reperfusion injury
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Expression of Cdn-1 in WI-L2 lymphoblastoid cells resulted in increased cell survival in response to anti-Fas-mediated apoptosis. Deletion of the N-terminal 59 amino acids of Cdn-1 only slightly decreased this activity, suggesting that small, truncated Cdn-1 molecules may be potent therapeutics.
                                                                                                                                                                                                                                                                                                                                          07-OCT-1994;
30-NOV-1993;
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autoimmune disease; reperfusion injury; hepatitis, osteoporosis;
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                                                             Seguence
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ch 94.1%;
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93US-0160067.
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100.0%;
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hes 0;
              DB 16;
2.5e-06;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         New nucleic acid sequences encoding Cdn apoptosis modulators related vectors, transformed cells, proteins and antibodies, or diagnosis and treatment e.g. of HIV infection, reperfusion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cdn-2; apoptosis modulator; adoptive immunotherapy; therapy; HIV; autoimmune disease; reperfusion injury; hepatitis, osteoporosis; shock; lymphoma; eczema.
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30-NOV-1993;
Human; Bak; apoptosis; latency; virus replication;
                                      Bak protein
                                                                                                                                             AAW03668 standard;
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16; Conservative
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93US-0160067.
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0; Mismatches
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useful
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Matches 16
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                                                                                                                                                                                                                                                                            Human; Bak-2; apoptosis; latency; virus replication;
Epstein-Barr virus; BHRF1; fusion protein; epitope tag;
drug screening; co-precipitation; ELISA; immunoassay; antibody;
protein interactive trapping; virucide; antitumour; diagnostic.
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0; Mismatches 0;
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Search completed: September 20, 2002, 10:35:59 Job time: 427 sec
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                                                                                                                                              Query Match 94.1%; Score 80; DB Best Local Similarity 100.0%; Pred. No. 2.5 Matches 16; Conservative 0; Mismatches
                                                                                                                                                                                                                                                            This Bak-2 protein sequence represents a bcl-1 homologue which interacts with Epstein-Barr virus (EBV) early lytic cycle BHRF1 protein, and is capable of modulating apoptosis. The protein may be used in complete or partial form, or as an epitope tag fusion protein, in a new virucide drug screening method, which involves combination of Bak-2 protein and a viral protein (e.g. EBV BHRF1), exposure to a test compound, and monitoring for disruption of the interaction, e.g. by co-precipitation, protein interactive trapping or ELISA. Interaction of Bak-2 and viral proteins allows viral replication or latency in the absence of apoptosis. Compounds which inhibit the interaction may be used as virucide, antitumour or diagnostic agents.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Screening for anti-viral agents - by detecting the ability of an agent to disrupt the interaction of a Bak protein and a viral protein
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N-PSDB; AAT42139.
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Copyright (c) 1993 - 2000 Compugen Ltd
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US-09-236-385A-18
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	Sequence 10, Appl			10,	Sequence 20, Appl				16	Sequence 3, Appli	Sequence 16, Appl	Sequence 3, Appli	Sequence 16, Appl	Sequence 3, Appli	Sequence 16, Appl	Sequence 3, Appli	Sequence 37, Appl	Sequence 11, Appl

ALIGNMENTS

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Query Match
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MOLECULE TYPE: peptide

SEQUENCE DESCRIPTION: SEQ
US-09-236-385A-35
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Patent No. 6221615
GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.; and
LUTZ, Robert J.
                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.

CURRENT APPLICATION NUMBER: US/09/236,385A

FILING DATE: 25-Jan-1999

CLASSIFICATION: CUnknown>

ATTORNEY/AGENT INFORMATION:

NAME: WIXON, HENRY N.

REGISTRATION NUMBER: 32,073

REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                         INFORMATION FOR SEQ ID NO: 35:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
GQVGRQLAIIGDDINR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 1455 Penr
CITY: Washington
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TELEFAX: 202-942-8484
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                                                                     94.1%; Score 80; DB 4; I
100.0%; Pred. No. 3.7e-08;
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; TOPOLOGY: Ilnear;
; MOLECULE TYPE: peptide
; SEQUENCE DESCRIPTION: SEQ ID NO:
US-09-236-385A-36
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TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 36
SEQUENCE CHARACTERISTICS:
LENGTH: 20 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08440391 Patent No. 5656725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best
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Patent No. 6221615
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.; and
APPLICANT: LUTZ, Robert J.
                                                                                                                                                                           TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSER
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                   STATE: D. 20004
                                                                                                                                 CITY: Washington
                                                                                                                                                       STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                   3 GOVGROLATIGDDINR 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 GOVGROLATIGDDINR 17
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: <Unknown>
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
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TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: WIXON, HENRY N. REGISTRATION NUMBER: 32,073
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1455 Pennsylvania Avenue, N.W.
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Pred. No.
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4e-08;
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; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-440-391-2
                                                                                      ; TOPOLOGY: 1; MOLECULE TYPE: US-08-440-391-18
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US-08-440-391-18
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Query Match 94.1%; Score 80; DB Best Local Similarity 100.0%; Pred. No. 5. Matches 16; Conservative 0; Mismatches
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Best Local Similarity 100.0%;
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                                                                                                                                                                                              TELEFAX: 202-942-8484 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                             CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 1043
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
COLASCIFICATION: AAS
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NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: LUTZ, ROBERT J.
TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CURRENT APPLICATION DATA:
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STREET: 14
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FILING DATE: 12-MAY
CLASSIFICATION: 435
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                                                                                                                                      amino acid
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1455 Pennsylvania Avenue, N.W.
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                                                                                                                          linear
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                                                                                                       peptide
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Pred. No.
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               DB 1; L
. 5.9e-08;
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. 5.9e-08;
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                                 Length 28
   Indels
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 Gaps
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 0;
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RESULT 5
US-08-908-597A-2
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; Sequence 18, Application US/08908597A

; Patent No. 5863795
                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-908-597A-2
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                                                                                                                                                                                                                                                                                                                            Matches
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                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.; and
APPLICANT: LUTZ, Robert J.
TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 2, Application US/08908597A Patent No. 5863795
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 202-942-8484 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNBY/AGENT IMPORMATION:
ATTORNEY/AGENT IMPORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                  NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: MODULATE APOPTOSIS
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CTTY: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: 202-942-8484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE:
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                                                                                                                                                                                                                                                                                                                                          Local
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                    ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                          16;
                                                                                                                                                                                                                                                                                                                                          Similarity
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1455 Pennsylvania Avenue, N.W.
E: Hale and Dorr
1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28 amino acid
                                                                                                                                                                                                                                                                                                                        ilarity 100.0%;
Conservative
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                                                                                                                                                                                                                                                                                                                                         94.1%; Score 80; DB 2; I
100.0%; Pred. No. 5.9e-08;
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GENERAL INFORMATION:
APPLICANT: CHITTENDEN, Thomas D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 530
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440
APPLICATION NUMBER: US/08/440
FILING DATE: 12-MAX-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REGISTRATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPHONE: 202-942-8484
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 94.1%; Score 80;
Best Local Similarity 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
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ZIP: 20004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6 GQVGRQLAIIGDDINR 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 GOVGROLATIGDDINR 17
                                                                                                                                                         ATTORNEY/AGENT INFORMATION: AUTHORNEY/AGENT INFORMATION: NAME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS
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amino acid
GY: linear
                                                                                                                                                                                                                                                                                                                                  CITY: Washington
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                                                                                                     REGISTRATION NUMBER: 32,073
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                                                                                     ATTORNEY DOCKET NO. 104322.147CIP
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: SEQUENCE TYPE: peptide SEQUENCE DESCRIPTION: SEQ ID NO: 18: US-09-236-385A-18
                                             RESULT 9
PCT-US96-06122-2
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US-09-236-385A-18
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                                                                                                                                                                             Query Match
Best Local Similarity
Matches 16; Conserv
Sequence 2, Application PC/TUS9606122 GENERAL INFORMATION:
APPLICANT: IMMUNOGEN, INC.
                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEPAX: 202-942-8440
TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 18:
SEQUENCE CHARACTERISTICS:
LENGTH: 28 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 18, Application US/09236385A Patent No. 6221615
GENERAL INFORMATION:
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Best Local Similarity 100
Matches 16; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: <UNknown>
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                            TOPOLOGY: linear MOLECULE TYPE: peptid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 20004
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LUTZ, Robert J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
                                                                                                                   GOVGROLATIGDDINR 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: CHITTENDEN, Thomas D.; and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
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                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                       94.18;
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100.0%; Pred. No.
tive 0; Mismatc
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0; Mismatches
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PCT-US96-06122-18
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TOPOLOGY: linear
; MOLECULE TYPE: peptide
PCT-US96-06122-2
                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 18, Application PC/TUS9606122 GENERAL INFORMATION: APPLICANT: IMMUNOGEN, INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local :
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INFORMATION FOR SEQ ID NO: 2:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                        TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS TITLE OF INVENTION: WHICH MODULATE APOPTOSIS NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAY-1995
                                                                                                 SOFTWARE: PATENTIN REL
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PC
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LENGTH: 28 amino acid
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION WIMBER: PCT/US96/06122
FILING DATE: HEREWITH
CLASSIFICATION:
DELICA APPLICATION:
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TELECOMMUNICATION INFORMATION:
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APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAY-1995
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NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,
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TITLE OF INVENTION: WH
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                              FILING DATE: I
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TELEPHONE: 202-942-8484
TELEFAX: 202-942-8484
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CITY: Washington
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1455 Pennsylvania Avenue, N.W.
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                                                                              HEREWITH
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                                                                                                                                       Release #1.0, Version #1.25
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                                                                                                   PCT/US96/06122
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5.9e-08;
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RESULT 11
US-08-440-391-14
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; TOPOLOGY: linear
; MOLECULE TYPE: peptide
PCT-US96-06122-18
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Patent No. 5656725
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Best Local Similarity
Matches 16; Conserv
                                               Matches
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Best Local
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APPLICANT: CHITTE
APPLICANT: LUTZ,
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INFORMATION FOR SEQ ID NO: 18:
                                                                                                                                                                                                                         TELEFAX: 202-942-8484 INFORMATION FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 104:
TELECOMMUNICATION INFORMATION:
TELECHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 104322.147PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8480
TELEFAX: 202-942-8484
                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 36 base pairs
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LENGTH: 28 amino acids
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ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,
                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: LUTE, ROBERT J.
TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                CURRENT APPLICATION DATA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: D. 20004
                                                                                                                                                                            TYPE: a
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: US/OFILING DATE: 12-MAY-1995 CLASSIFICATION: 435
                                               Local Similarity
nes 16; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: Washington
                                                                                                                                                         TYPE: amino acid TOPOLOGY: linear
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2 GOVGROLATIGDDINR 17
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1455 Pennsylvania Avenue, N.W.
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                                               Conservative
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                                                                                                                                                         linear
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                                                                                                                                        peptide
                                          100.0%; F1
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                                              94.1%; Score 80; DB
100.0%; Pred. No. 7.0
Live 0; Mismatches
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                                         DB 1; L., o. 7.9e-08; 0;
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                                               Indels
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US-09-236-385A-14
; Sequence 14, Application US/09236385A; Patent No. 6221615
; Patent No. 6221615
; GENERAL INFORMATION:
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; TOPOLOGY: linear
; MOLECULE TYPE: peptide
US-08-908-597A-14
                                                                                                                                                                                                                                                                                             RESULT
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US-08-908-597A-14
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APPLICANT: CHITTE
APPLICANT: LUTZ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REFERENCE/DOCKET NUMBER: 10.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: TBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: MOVEL PEPTIDES AND COMPOSITIONS WHICH
TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STATE: L.
STATE: 20004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 530
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                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
COMPUTER READABLE FORM:
                                                                                                                                            TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                  APPLICANT: CHITTENDEN, Thomas D.; and
                                                                                                                            NUMBER OF SEQUENCES:
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                                   CITY: Washington STATE: D.C.
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1455 Pennsylvania Avenue, N.W.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQ ID NO:
                                                                                                                                                                                  LUTZ,
                                                                                                                                                                                                                                                                                                                                                                                                                                          94.1%; Score 80; 100.0%; Pred. No.
                                                                                                                                                                                  Robert J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US/08/908,597A
                                                                                                                                                                                                                                                                                                                                                                                                                          0;
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                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2; Li
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 36;
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; MOLECULE TYPE: peptide; SEQUENCE DESCRIPTION: SEQ ID NO: 14: US-09-236-385A-14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US96-06122-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 14, Application PC/TUS9606122
GENERAL INFORMATION:
APPLICANT: IMMUNGEN, INC.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS
TITLE OF INVENTION: WHICH MODULATE APOPTOSIS
NUMBER OF SEQUENCES: 34
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                       PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/440,391
PILING DATE: 12-MAY-1995
CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
ANAME: MIXON, HENRY N.
REGISTRATION NUMBER: 32,073
REGISTRATION NUMBER: 104322.147
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                            INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: 1455 Penns
CITY: Washington
STATE: D.C.
ZIP: 20004
                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: FILING DATE: HEREW CLASSIFICATION:
TOPOLOGY:
                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 94.1%; Score 80; DB 4; I Local Similarity 100.0%; Pred. No. 7.9e-08; BS 16; Conservative 0. Michael 10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8 GOVGRQLAIIGDDINR 23
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 GOVGROLATIGDDINR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: PALENTIN Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: CUNKNOWN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 36 base pairs
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION: NAME: WIXON, HENRY N.
                     amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          E: Hale and Dorr
1455 Pennsylvania Avenue,
                                          36 base pairs
                                                                                                         202-942-8484
                                                                                                                                                                                                                                                                                                                                                                      HEREWITH
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                                                                                                                                                                        104322.147PCT
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US-08-471-058-23
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                                                             Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 94.3
Best Local Similarity 100
Matches 16; Conservative
                                                                          Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/471,05
FILING DATE: 06-JUN-1995
CLASSIFICATION: 800
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/320,157
FILING DATE: 07-CCT-1994
APPLICATION NUMBER: 08/160,067
FILING DATE: 30-NOV-1993
ATTORNEY/AGENT INFORMATION:
NAME: Lehnhardt, Susan K
                                                                                                                                                                                                                                 TELEFAX: 415-494-0792
TELEX: 706141
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
APPLICANT: Kiefer,
                                                                                                                                                                                                                                                                  REFERENCE/DOCKET NUMBER: 33,943
REFERENCE/DOCKET NUMBER: 23647-20007.12
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-813-5500
TELEPHAX: 415-404-777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 141 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/471,058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                      LENGTH: 141 amino acids TYPE: amino acid STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM CONTROL OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CITY: Palo Alto
STATE: CA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 8 GQVGRQLAIIGDDINR 23
                              2 GOVGROLATIGDDINR 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 GOVGROLATIGDDINR 17
                                                             16;
                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94304-1018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                755 PAGE MILL ROAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Barr, Philip
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kiefer, Michael C.
                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IBM Compatible
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                                                                                                                                                                    single
                                                                          94.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOVEL APOPTOSIS MODULATING PROTEINS AND METHODS OF USE THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94.18;
                                                             Score 80; DB 1; Length 141; pred. No. 4e-07; O; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 5; Length 36; 7.9e-08; hes 0; Indels
                                                             0;
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                                                             Gaps
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Search completed: September 20, 2002, 10:37:21

Job time: 409 sec

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Perfect score:
Sequence:
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Maximum Match 100%
Listing first 45 summaries
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                                                                                                                                                  length: 0
length: 2000000000
PIR_71:*
1: pir1:*
2: pir2:*
3: pir3:*
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85
                                                                                                                                                                                                                                                                                                                                                                                     September 20, 2002, 10:39:13; Search time 95.59 Seconds (without alignments) 17.089 Million cell updates/sec
                                                                                                                                                                                                                                                                    Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                   283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                      KGQVGRQLAIIGDDINR 17
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

pir4:\*

## SUMMARIES

C; Species: Homo sapiens (	ribose-phosphate p	A53433	356	49.4	42	29
cdn-2 protein - human	ribose-phosphate p	S71460	356 2	49.4	42	28
S58875	probable H+/K+-exc	в95969	827 2	50.6	43	27
RESULT 2	hypothetical prote	T23999	770 2	50.6	43	26
	hypothetical prote	D96633	664 2	50.6	43	25
	hypothetical prote	T48031	475 2	50.6	43	24
Db 72 GQVGRQLAIIGDDIN	probable enolase [	G86940	447 2	50.6	43	23
	phosphopyruvate hy	T02221	446 2	50.6	43	22
Qy 2 GQVGRQLAIIGDDIN	probable phosphopy	T03267	446 2	50.6	43	21
	phosphopyruvate hy	JQ1185	444 2	50.6	43	20
Matches 16; Conserva	phytoene dehydroge	JN0084	532 2	51.2	43.5	19
Best Local Similarity	probable copper-tr	E70041	803 1	51.8	44	18
Query Match	pilus biogenesis p	G82618	693 2	51.8	44	17
	ABC-type transport	S75352	593 2	51.8	4.4	16
	probable chemorece	B71213	261 2	51.8	44	15
A;Cross-references: GDB:6	sy v-atpase proteo	H75027	258 2	51.8	4.4	14
A; Gene: GDB; BAK	probable protein p	H84643	355 2	52.4	44.5	13
C; Genetics:	enolase - Helicoba	н71967	426 2	52.9	4.5	12
A;Cross-references: EMBL:	phosphopyruvate hy	S58684	426 2	52.9	45	11
A; Residues: 1-211 <kie></kie>	conserved hypothet	F89890	263 2	52.9	45	10
A; Molecule type: mRNA	F54F2.1 protein -	S44824	1226 2	54.1	46	9
A; Status: preliminary	cation transport A	H82104	915 2	54.1	46	8
A; Accession: S58874	probable ATPase yb	E85546	834 2	54.1	46	7
A; Reference number: S5887	Cu(I)-translocatio	A90696	834 2	54.1	46	6
A; Title: Modulation of ap	probable copper-tr	C64779	834 1	54.1	46	ر. ن
Nature 374, 736-739, 1995	H+/K+-exchanging A	AE0564	833 2	54.1	46	4
R; Kiefer, M.C.; Brauer, M	protein phosphatas	T06308	357 2	55.9	47.5	u
A; Cross-references: EMBL:	cdn-2 protein - hu	S58875	211 2	94.1	08	
A; Residues: 1-211 <far></far>	Bak protein - huma	S58873	211 2	94.1	80	-بر،
A; Molecule type: mRNA		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1 1 1 1 1 1	
A; Status: preliminary	Description	ID	ength DE	Match Length DB	Score	No.
A; Accession: S58872				Query		Result
A; Released Humber: 5000/				•		

(man)

## ALIGNMENTS

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C;Species: Homo sapiens (man)
C;Date: 15-Feb-1996 #sequence_revision 01-Mar-1996 #text_change 08-Oct-1999
C;Accession: S58873; S58872; S58874
R;Chittenden, T.; Harrington, E.A.; O'Connor, R.; Flemington, C.; Lutz, R.J.; Evan, G
Nature 374, 733-736, 1995
A;Title: Induction of apoptosis by the Bcl-2 homologue Bak.
A;Reference number: S58873; MUID:95231653
A;Accession: S58873
A;Accession: S58873
A;Status: preliminary; nucleic acid sequence not shown
A;Molocule type: many
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: EMBL:U23765; NID:g758797; PIDN:AAA93066.1; PID:g758798 R;Farrow, S.N.; White, J.H.M.; Martinou, I.; Raven, T.; Pun, K.T.; Grinham, C.J.; Nature 374, 731-733, 1995
Nature 374, 731-733, 1995
A;Title: Cloning of a bcl-2 homologue by interaction with adenovirus E1B 19K.
A;Reference number: S58872; MUID:95231652
A;Accession: S58872
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: mRNA
A; Residues: 1-211 <CHI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bak protein - human
N;Alternate names: bcl-2 homolog; cdn-1 protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Molecule type: mRNA;Residues: 1-211 <FARS; Residues: 1-211 <FARS; Cross-references: EMBL:x84213; NID:g804984; PIDN:CAA58997.1; PID:g804985; Cross-references: EMBL:x84213; NID:g804984; PIDN:CAA58997.1; PID:g804985; Klefer, M.C.; Brauer, M.J.; Powers, V.C.; Wu, J.J.; Umansky, S.R.; Tomei, L.D ature 374, 736-739, 1995
ature 374, 736-739, 1995
gYitle: Modulation of apoptosis by the widely distributed Bcl-2 homologue Bak.; Reference number: S58874; MUID:95231654
sRacession: S58874
sStatus: preliminary
                                                                                                                               Query Match 94.1%; Score 80; DB 2; Louis Local Similarity 100.0%; Pred. No. 5.4e-06; Matches 16; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                         Molecule type: mRNA
Residues: 1-211 <KIE>
Cross-references: EMBL:U16811; NID:g595923; PIDN:AAA74466.1;
                                                                                                                                                                                                                                                                                                           Cross-references: GDB:635887
                                                                                                                                                                                                                                                                                                                                             Gene: GDB:BAK
                                                                                                                                                                                                                                                                                                                                                                           Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Status: preliminary
72 GQVGRQLAIIGDDINR 87
                                 2 GQVGRQLAIIGDDINR 17
                                                                                                                                                                                                  Length 211;
                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                         PID:g595924
                                                                                                                                   0
                                                                                                                                      Gaps
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                                                                                                                                      0:
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A:Cross-references: EMBL:AL049607; GSPDB:GN00062; ATSP:F11C18. A:Experimental source: cultivar Columbia; BAC clone F11C18 C:Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R;Bevan, M.; Terryn, N.; Ardiles, W.; Buysshaert, C.; Dasseville, ewes, H.W.; Mayer, K.F.X.; Schueller, C. submitted to the Protein Sequence Database, April 1999 A;Reference number: Z15589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C:Date: 15-Feb-1996 #sequence_revision 01-Mar-1996 #text_change 21-Jul-2000 C:Accession: S58875 R.K. Brauer, M.J.; Powers, V.C.; Wu, J.J.; Umansky, S.R.; Tomei, L.D.; R:Kiefer, M.C.; Brauer, M.J.; Powers, V.C.; Wu, J.J.; Umansky, S.R.; Tomei, L.D.; Nature 374, 736-739, 1995 R.Title: Modulation of apoptosis by the widely distributed Bcl-2 homologue Bak. A:Title: Modulation of apoptosis by the widely distributed Bcl-2 homologue Bak. A:Reference number: S58874, MUID:95231654
                                                                                               Nature 413, 848-852, 2001
A;Authors: Parry, C.; Quail, M.; Rutherford, K.; Simm A;Title: Complete genome sequence of a multiple drug A;Reference number: AB0502; PMID:11677608
A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                          H+/K+-exchanging ATPase (EC 3.6.1.36) - Salmonella enterica subsp. enterica C;Species: Salmonella enterica subsp. enterica serovar Typhi A;Note: this species has also been called Salmonella typhi C;Date: 09-Nov-2001 #sequence_revision 09-Nov-2001 #text_change 27-Nov-2001 C;Accession: AE0564
R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, J.; Dougan, G.; James, K.D.; Thomson, N.R.; Pickard, D.; Wain, R;Parkhill, M;Parkhill, M;Parkhi
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A; Introns: 39/3; (
C; Superfamily: hur
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-357 <BEV>
A; Cross-references: EMB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C:Date: 30-Apr-1999
C:Accession: T06308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               protein phosphatase 2C homolog F11C18.60 - Arabidopsis thaliana ("Species: Arabidopsis thaliana (mouse-ear cress)
C;Species: 30-Apr-1999 #sequence_revision 30-Apr-1999 #text_change 15-Jun-2001
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A; Residues: 1-211 <KIE>
A; Cross-references: EMBL: U16812; NID: 9595925;
A; Note: the nucleotide sequence was submitted
                                          A; Molecule type: DNA
A; Residues: 1-833 <P.
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          A;Cross-references: GB:AL513382;
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                                                                                                                                                                                                                                                                                                                                    T.; Connerton,
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ily: human pl
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16; Conser
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llarity 100.08;
Conservative
                                             <PAR>
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55.6%;
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iin, A.;
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PIDN:CAD04983.1; PID:g16501768; GSPDB GN00176
                                                                                                                                                                                                                                                                                                                                 K.D.; Thomson, N.R.;
Davis, P.; Davies, R.

    Salmonella enterica subsp. enterica
enterica serovar Typhi

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5.4e-06;
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                                                                                                                                                                                                     Simmonds, M.;
drug resistant
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.M.; Dowd, L.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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C;Genetics:
A, Gene: ybar
A, Gene: ybar
A, Gene: ybar
A, Gene: ybar
C;Superfamily: Bacillus probable copper-transporting ATPase yvgX; ATPase
C;Superfamily: Bacillus probable copper to transport; metal binding
C;Keywords: ATP; copper binding; hydrolase; ion transport; metal binding
F;9-38/Domain: heavy-metal-associated homology <HMA1>
F;105-134/Domain: transmembrane #status predicted <TM1>
F;18-234/Domain: transmembrane #status predicted <TM2>
F;24-568/Domain: transmembrane #status predicted <TM3>
F;438-454/Domain: transmembrane #status predicted <TM4>
F;33-647/Domain: transmembrane #status predicted <TM5>
F;438-454/Domain: transmembrane #status predicted <TM5>
F;631-647/Domain: transmembrane #status predicted <TM5>
F;643-785/Domain: transmembrane #status predicted <TM6>
F;503/Active site: Asp (aspartylphosphate intermediate) #status predicted
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R;Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; E. A.; Rose, D.J.; Mau, B.; Shao, Y.

Science 277, 1453-1462, 1997

A;Title: The complete genome sequence of Escherichia coli K-12.

A;Reference number: A64720; MUID: 97426617

A;Reference number: A64720; MUID: 97426617
A;Reference number: A99629; MUID:21156231; PMID:11258796
A;Accession: A90696
A;Status: preliminarv
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C64779
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A; Gene: STY0544
C; Superfamily: Bacillus
C; Keywords: hydrolase
                                                                      R; Hayashi, T.; Makino, K.; Ohnishi, M.; gasawara, N.; Yasunaga, T.; Kuhara, S.; DNA Res. 8, 11-22, 2001
A; Title: Complete genome sequence of ent
                                                                                                                                                           Cu(1)-translocation P-type ATPase (imported) - C;Species: Escherichia coli
C;Date: Ha-Jul-2001 #sequence_revision 18-Jul-2
C;Accession: A90696
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A90696
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A; Residues: 1-834 <BLAT>
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C;Species: Escherichia coli
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Best Local :
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|712 GRQVAMVGDGIN
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8; Conser
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66
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Pred.
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Pred.
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ced. No. 15;
Mismatches
                                                                                                                                                                                      18-Jul-2001 #text_change
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No.
                                                                                                                  Kurokawa, K.;
Shiba, T.; Ha
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15;
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binding; phosphoprot
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A;Molecule type: DNA
A;Residues: 1-915 <HEI>
A;Cross-references: GB;AE004293;
A;Experimental source: serogroup
                                                                                                                                                                                    R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, I, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
A;Title: DNA Sequence of both chromosomes of the cholera patho A;Reference number: A82035; MUID:20406833
A;Accession: H82104
                                                                                                                                                                                                                                                                                                                                                    cation transport ATPase, E1-E2 family VC2215 [imported] - Vibrio cholerae (strain N16961 C;Species: Vibrio cholerae C;Species: Vibrio cholerae C;Species: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 02-Feb-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Watches 8; Conserv
    A; Map position: 1
C; Superfamily: Ba
                                              A; Gene: VC2215
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                probable ATPase ybaR [imported] - Escherichia coli (strain 0157:H7, substrain EDL933) C;Species: Escherichia coli C;Species: Escherichia coli C;Date: 16-Feb-2001 *sequence_revision 16-Feb-2001 *text_change 14-Sep-2001 C;Accession: E85546
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C:Superfamily: Bacillus probable copper-transporting ATPase yvgx; ATPase nucleotide-bind
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A;Cross-references: GB:BA000007; PIDN:BAB33960.1; PID:g13359994; GSPDB:GN00154
A;Experimental source: strain O157:H7, substrain RIMD 0509952
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66.7%;
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3; Mismatches
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                                                                                   PIDN:AAF95359,1; GSPDB:GN001
El Tor
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H.; Dragoi, I.; Sellers,
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Potamousis, K.; A
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Query Match

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46;

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RESULT S58684

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KGQTGRMLAFIG

phosphopyruvate hydratase (EC 4.2.1.11) - Helicobacter pylori (strains 26695 and N;Alternate names: enolase C;Species: Helicobacter pylori

Helicobacter pylori

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conserved hypothetical protein SA1030 [imported] - Staphylococcus aureus (strain N3: C;Species: Staphylococcus aureus C;Species: Staphylococcus aureus C;Species: Staphylococcus aureus C;Species: Staphylococcus aureus C;Spate: 10: May-2001 #sequence_revision 10-May-2001 #text_change 22-Oct-2001 C;Accession: F89890 R;Kuroda, M.; Ohta, T.; Uchiyama, I.; Baba, T.; Yuzawa, H.; Kobayashi, I.; Cui, L.; ma, A.; Mizutani-Ui, Y.; Kobayashi, N.; Sawano, T.; Inoue, R.; Kaito, C.; Sekimizu, C.; Shiba, T.; Hattori, M.; Ogasawara, N.; Hayashi, H.; Hiramatsu, K. Lancet 357, 1225-1240, 2001
                                                Query Match
Best Local Similarity
Thehes 9; Conserv
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A;Gene: SA1
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F89890
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A;Residues: 1-1226 <AND>
A;Cross-references: EMBL:L23645; NID:g388603;
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submitted to the EMBL Data
A; Description: Sequence of
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A; Residues: 1-263 < KUR>
                                                                                                                                                                                                                                                                              A;Title: Whole genome sequencing of meticillin-resistant Stapylococcus aureus A;Reference number: A89758; MUID:21311952; PMID:11418146 A;Accession: F89890
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A; Accession: S44824
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A;Status: nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-426 <TON>
A;Cross-references: GB:AE000536; GB:AE000511; NID:g2313230; PIDN:AAD07219.1; PID:g2313
A;Experimental source: strain 26695
A;Experimental source: strain 26695
A;Schmitt, W.; Odenbreit, S.; Heuermann, D.; Haas, R.
Mol. Gene Canet 248 563-572, 1995
A;Title: Cloning of the Helicobacter pylori recA gene and functional characterization of A;Reference number: S58684
A;Molecule type: DNA
A;Residues: 1-25,/1,/27-68 <SCH>
A;Residues: 1-25,/1,/27-68 <SCH>
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C;Genetics:
A;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A71800; MUID:99120557 A;Accession: H71967
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C; Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 22-Jun-1999
C; Accession: H71967
R; Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Doig, P.C.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Nature 397, 176-180, 1999
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A; Residues: 1-426 <Al
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A;Accession: B64539
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                                                                                                                                                                                                                                                                                                                                                                                       A; Experimental source: strain
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;Superfamily: enolase
;Superfamily: enolase
;Reywords: carbon-oxygen lyase; gluconeogenesis; glycolysis;
;A2/Binding site: magnesium 2 (Ser) #status predicted
;205,338/Active site: Glu, Lys #status predicted
;205,338/Active site: Glu, Lys #status predicted
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:Residues: 1-25,'I',27-68 <SCH>
:Cross-references: EMBL:Z35478
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:Cross-references: GB:AE001453; GB:AE001439; NID:g4154651; PIDN:AAD05723.1; PID:g415465
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Rilin X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; Vanaken, S.E.; Umayam, L.; Tallon, euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter Nature 402, 761-768, 1999

A; Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana. A; Reference number: A84420; MUID:20083487

A; Accession: H8463

A; Kaul, S.; Caroo, A; Cross-references: GB:AE002093; NID:94559345; PIDN:AAD23006.1; GSPDB:GN00139

C; Superfamily: human phosphoprotein phosphatase 1A
                                                                                                                                                                                                                                                                                                                                                                                                                       A;Reference number: A75001
A;Accession: H75027
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-258 <KAW>
A;Cross-references: GB:AJ248288; GB:AL096836; NID:g5458960; PIDN:CAB50662.1;
A;Experimental source: strain Orsay
C;Genettcs:
A;Gene: PAB1189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         probable protein phosphatase 2C [imported] - Arabidopsis thaliana
C;Specias: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 15-Jun-2001
C;Accession: H84643
C;Date: 14-Aug-1998 *sequence_revision C;Accession: B71213 R;Kawarabayasi, Y; Sawada, M.; Horikaw M.; Ohfuku, Y.; Funahashi, T.; Tanaka, DNA Res. 5, 55-76, 1998
                                                                                                       probable chemoreceptor protein - Pyrococcus horikoshii
C;Species: Pyrococcus horikoshii
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Copyright (c) 1993 - 2000 Compugen Ltd.
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through a collaboration d the EMBL outstation on restrictions on its content is in no way by and for commercial by and for commercial www.isb-sib.ch/announce/	al). TISSUES, W BAK, BAD A INTERACTIC 2). 3).	Bcl-2 homologue Bcl-2 homologue MULUS, ACCELERATES AIZING THE A 9K PROTEIN. ( PROTEIN, AND BCL-	lator BAK-2). Euteleostomi; Homo		Q10350 schizosacch Q59269 caulobacter Q9ux20 pyrococcus P42848 thermotoga Q9kpc5 vibrio chol Q43221 alnus gluti Q9126 ricinus com Q10381 mycobacteri Q91278 mus musculu Q90380 gallus gall P55934 ictalurus p

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MEDLINE-96091131; PubMed-8521816;
Chittenden T., Flemington C., Houghton A.B., E
Elangovan B., Chinnadurai G., Lutz R.J.;
"A conserved domain in Bak, distinct from BH1
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Submitted (NOY-1996) to the EMBL/GenBank/DDBJ
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[3]
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Eukaryota; Metazoa; Chordata;
Mammalla; Eutheria; Primates;
NCBI_TaxID=9606;
STRUCTURE
                                     "A conserved domain in Bak, distinct f death and protein binding functions."; EMBO J. 14:5589-5596(1995).
                                                                                                                                                                                                                                                                                                        Submitted (JAN-2000) to the EMBL/GenBank/DDBJ
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Sattler M., Liang H., Nettesheim D., Meadows R.P., Harlan J.E.,
Sattler M., Yoon H.S., Shuker S.B., Chang B.S., Minn A.J.,
Thompson C.B., Fesik S.W.;
"Structure of Bcl-xL-Bak peptide complex: recognition between
"Structure of apoptosis";
science 275:983-986(1997).
-i- FUNCTION: IN THE PRESENCE OF AN APPROPRIATE STIMULUS, ACCELERATES
-PROGRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING THE A
REPRESSOR BCL-2 OR ITS ADENOVIRUS HOMOLOG E1B 19K PROTEIN.
-i- SUBUNIT: FORMS HETERODIMERS WITH BCL-2, E1B 19K PROTEIN, AND BCL-
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MIM; 600516; -.
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                                                                                                                                                                                                                                                                                                            72
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TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES, WIT
HIGHEST LEVELS IN THE HEART AND SKELETAL MUSCLE.
DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD AND
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                            GQVGRQLAIIGDDINR 17
                                                                                                                                                                                                                                                                                                            GOVGROLATIGDDINR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        s; Transmembrane; 3D-structure.
74 88 BH3.
117 186 BH1.
117 186 BH2.
169 184 BH2.
188 205 POTENTIAL.
23109 MW; A2200FE72
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PS50062;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BH3; 1.
BCL2_FAMILY; 1.
                                                                                                                                                                                                                                                                                                            87
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            POTENTIAL.
; A2200FE72A46D04E CRC64;
      (Apoptosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 1; L
7.7e-06;
         regulator
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 211;
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Q59385; P78245;
Q1-NOV-1997 (Rel. 3
Q1-NOV-1997 (Rel. 3
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"Gene structure, cDNA sequence, and expression of mur proapopitotic Bc1-2 family member.";
Genomics 44:195-200(1997).
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between
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SEQUENCE
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Mammalia; Eutheria;
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                                                         ECOLI
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                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002475; InterPro; IPR000712;
                                                                                                                69
                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY).

SUBUNIT: FORMS HETERODIMERS WITH BCL-2, E1B 19K PROTELL X(L) (BY SIMILARITY).

X(L) (BY SIMILARITY).

SUBCELLULAR LOCATION: Membrane-associated (Potential).

SUBCELLULAR LOCATION: MIDELY EXPRESSED.
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DOMAIN: INTACT BH3 DOMAIN IS REQUITED BY BIK, BID, BAK,
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTI
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY (BY SIMILARITY).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION: IN THE PRESENCE OF AN APPROPRIATE STIMULUS, PROGRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING 'REPRESSOR BCL-2 OR ITS ADENOVIRUS HOMOLOG E1B 19K PRO'
                                                                                                                                                                                                                                                                                                                             m; PF00452; Bc1-2; 1.
RT; SM00337; BCL; 1.
SITE; PS01080; BH; 1.
SITE; PS01258; BH2; 1.
SITE; PS01259; BH3; 1.
SITE; PS50062; BCL2_FAMILY; 1.
                                                                                                             GQVGRQLAIIGDDINR 17
                                                                                                                                                                       Similarity
15; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                          ; Transmembrane.
71 85
114 133
166 181
185 202
208 AA; 23300 1
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                                                                                                                                                                       Conservative
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                                          STANDARD;
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Last sequence update)
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Pred. No. 1.6e-05;
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Probable copper-transporting ATPase (EC 3.6.3 YBAR OR B0484
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Blattner F.R., Plunkett G. III, Bloch C.A., Pern Riley M., Collado-Vides J., Glasner J.D., Rode C Gregor J., Davis N.W., Kirkpatrick H.A., Goeden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-K12;
Das S., Chu
                                                                                                                                          TRANSMEM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mau B., Shao Y.; "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria;
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                                                                                                                                                                                                                                                                                                   InterPro; IPR001757; E1-E2_A
InterPro; IPR001934; HMA.
InterPro; IPR001454; Hydrola
Pfam; PF00122; E1-E2_ATPase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                     Pfam; PF00403; HMA; 2.
Pfam; PF00702; Hydrolase;
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P04129; 1AFJ.
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                                                                                                                                                                                                                                                                                                    Hydrolase.
_ATPase; 1.
                                                                                                                                                                                                                                                                                                                                               E1-E2_ATPase.
                                                                                                                                           Complete proteome POTENTIAL. POTENTIAL.
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                                                                                                                                                                                        Phosphorylation;
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EMBL/GenBank/DDBJ databases
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                                                                                                                                                                                           ATP-binding; Copper;
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yhew G.F.,
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WormPep; F54F2.1; CE00194.

InterPro; IPR000413; Integrin_alpha.

Pfam; PF01839; FG-GAP; 5.

Pfam; PF00357; Integrin_A; 1.

PRINTS; PR01185; INTEGRINA.
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01-FEB-1994
                                                                                                                                                 EMBL; L23645; AAK26134.1; PIR; S44824; S44824.
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MEDLINE-94150718; PubMed-7906398;
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Rhabditidae; Pelode:
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nes 8; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2 Mb of contiguous nucleotide sequence from chromosome III
                                                                                                                                                                                                                 s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EM European Bioinformatics Institute. There are no restr by non-profit institutions as long as its content ifted and this statement is not removed. Usage by and lities requires a license agreement (See http://www.isb-send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5 GRQLAIIGDDIN 16
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SUBCELLULAR LOCATION: Type I membrane protein (By similarity). SIMILARITY: BELONGS TO THE INTEGRIN ALPHA CHAIN FAMILY. SIMILARITY: CONTAINS 7 FG-GAP REPEATS.
                                                                                                                              P11215; 1A8X.
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(Rel. 28, Last sequence up
(Rel. 41, Last annotation
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COPPER (POTENTIAL).
PHOSPHORYLATION (PROBABLE).
EAIEDDAKRRERQOETAVAT ->
KRIKMTLNAASASKKPPSIA (IN REF. 1)
A -> R (IN REF. 1).
Q -> R (IN REF. 1).
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Pfam: PF02578; DUF152; 1.

Hypothetical protein.

SEQUENCE 263
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Q9ZHA4;
16-OCT-2001
                                                                                                                                use by non-profit institutions as long modified and this statement is not removed. entities requires a license agreement (See
                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Enthe European Bioinformatics Institute. There are no rest
                                                                                                                                                                                                                                                     Massidda O., Anderluzzi D., Friedli L., Feger "Unconventional organization of the division a cluster of Streptococcus pneumoniae.";
Microbiology 144:3069-3078(1998).
-!- SIMILARITY: BELONGS TO THE UPF0124 FAMILY.
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Bacteria; Firmicutes; Bacillus/Staphylococcus
                                                                                                                  or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                         Massidda O., Anderluzzi D.,
                                                                                                                                                                                                                                                                                                                                          STRAIN=ATCC 14154;
MEDLINE=99061199; PubMed=9846742;
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PROSITE; PS00242; INTEGRIN.
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    Glycoprotein; Transmembrane;

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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                 This SWI
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Gibson R., Merberg D., Mills
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                                                                                                                                  METAL
                                                                                                                                                          PRINTS; PR00148; ENOLASE.

PRODOM; PD009902; ENOLASE; 1.

PROSITE; PS00164; ENOLASE; 1.

LYase; Glycolysis; Magnesium;

ACT_SITE 155 155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       *Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.*;
Nature 397:176-180(1999)
-i- CATALYTIC ACTIVITY: 2-phospho-D-glycerate - phosphoenolpyruvate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-99120557; PubMed-9923682;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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Bacteria; Proteobacteria; epsilon subdivision; Helicobacter group;
                                                                                                                                                                                                                          Pfam; PF00113; enolase;
                                                                                                                                                                                                                                     InterPro; IPR000941; Enclase.
                                                                                                                                                                                                                                                  EMBL; AE001453;
HSSP; P00924; 41
                                                                                                                                                                                                                                                                                   or send
                                                                                                                                                                                                                                                                                                              modified
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                                                                                                                                                                                                                                                                                                           s SWISS-PROT entry is copyright. It is produced through ween the Swiss Institute of Bioinformatics and the EM European Bioinformatics Institute. There are no restress to non-profit institutions as long as its content if it is and this statement is not removed. Usage by and
                                                                                                                                                                                                                                                                                                                                                                                     PATHWAY: GLYCOLYSIS.
SUBJURIT: HOMODIMER (BY SIMILARITY).
SUBJURIAR LOCATION: Cytoplasmic (By similarity).
SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                   H(2)O.
COFACTOR: MAGNESIUM IS REQUIRED FOR CATALYSIS AND FOR STABILIZING THE DIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cerate hydro-lyase).
OR JHP0142.
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ELGRQIQLVGDDL
                      QVGRQLAIIGDDI 15
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A., Ling L.-S.L., Moir D.T., King B.L., Brown E.U., Long D.R., Carmel G., D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G., D.R., Noonan B., Uria-Nickelsen M., Mills D.M., Ives C., no P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C., Marberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis
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9; Conserv
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                                               Similarity 46. 6; Conservative
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(Rel. 40, Last annotation update)
4.2.1.11) (2-phosphoglycerate dehydratase) (2-phospho-D-
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MAGNESIUM (BY SIMILARITY).
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6.6;
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L outstation
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P48285;
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01-NOV-1997
16-OCT-2001
Enolase (EC
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MEDLINE=97394467; PubMed=9252185;

MEDLINE=97394467; PubMed=9252185;

Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.,

Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S., Dougherty B.A.

Melson K., Quackenbush J., Zhou L., Kirkness E.F., Peterson S.,

Loftus B., Richardson D., Dodson R., Khalak H.G., Glodek A.,

McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey E.K.,

McKenney K., FitzGerald L.M., Lee N., Adams M.D., Kelley J.M.

Cotton M.D., Weldman J.M., Fujii C., Bowman C., Watthey L., Wallin

Cotton M.D., Weldman J.M., Fujii C., Bowman C., Watthey L., Wallin

Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   glycerate hydro-lyase).
ENO OR HP0154.
                                                                       Lyase; Gl
ACT_SITE
                                                                                                                                                                                                                                                   between the Swiss Institute of Bioinforma
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed
entities requires a license agreement (See
or send an email to license@isb-sib.ch).
                                                                                                    InterPro; IPR000941; Enolase. Pfam; PF00113; enolase; 1. PR10113; enolase; 1. PR10175; PR00148; ENOLASE; PR0D0m; PD000902; Enolase; 1. PROSITE; PS00164; ENOLASE; 1.
                                                                                                                                                                             EMBL; AE000536; AAD07219.1; -.
EMBL; U13756; AAC43380.1; -.
HSSP; P00924; 4ENL.
TIGR; HP0154; -.
                                                                                                                                                                                                                                                                                                                                              This
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-!- PATHWAY: GLYCOLYSIS.
-!- SUBUNIT: HOMODIMER (BY SIM
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"Isolation of the Helicobacter pylori recA gene and involvement recA region in resistance to low pH.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-178 FROM N.A. STRAIN-ATCC 53726 / 84-183; MEDLINE-95286262; PubMed-7768597; Thompson S.A., Blaser M.J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria;
Helicobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nature 388:539-547(1997).
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COFACTOR: MAGNESIUM IS REQUIRED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                recA region in resistance to ect. Immun. 63:2185-2193(1995)
                                                                                                                                                                                                                                                                                                                                                          SUBURIT: HOMODIMER (BY SIMILARITY).
SUBCELLULAR LOCATION: Cytoplasmic (By similarity).
SIMILARITY: BELONGS TO THE ENOLASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CATALYTIC ACTIVITY:
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 31ycolysis;
3 155
242
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(Rel. 40, Last annotatio
4.2.1.11) (2-phosphoglyc
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Last annotation update)
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MAGNESIUM (BY SIMILARITY).

V -> I (IN REF. 2).

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subdivision;
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL: Z99121; CAB15355.1; ...
HSSP; P04129; 1AFJ.
SubtiList; BG14106; yvgx.
InterPro; IPR001366; Cad_ATPase.
InterPro; IPR001756; Cu_ATPase.
InterPro; IPR001756; Cu_ATPase.
InterPro; IPR001877; Cu_ATPase.I.
InterPro; IPR001877; E1-E2_ATPase.
InterPro; IPR001877; E1-E2_ATPase.
InterPro; IPR001874; Hydrolase.
InterPro; IPR001444; Hydrolase.
InterPro; IPR001454; Hydrolase.
InterPro; IPR00122; E1-E2_ATPase; 1.
                                                                                                                                    PRINTS; PRO0941; CDATPASE.
PRINTS; PRO0943; CUATPASE:
PRINTS; PR00942; CUATPASEI.
PRINTS; PR00946; HGSCAVENGER.
PROSITE; PS00154; ATPASE_E1_E2; 1
PROSITE; PS01047; HMA_1; 2
PROSITE; PS50846; HMA_2; 2
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032220;
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30-MAY-2000 (Rel. 39, Last sequence update)
31-MAR-2002 (Rel. 41, Last annotation update)
Potential copper-transporting ATPase (EC 3.6.3.4).
     Metal-binding; C
TRANSMEM 163
TRANSMEM 197
TRANSMEM 229
                                                                                                                                                                                                                                                                                                                               Pfam; PF00122; E1-E2_ATPase; pfam; PF00403; HNA; 2. Pfam; PF00702; Hydrolase; 1. PRINTS; PR00119; CATATPASE. PRINTS; PR00940; CATPATPASEA.
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NCBI_TaxID=1423;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Firmicutes;
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                                                                                                          Hydrolase;
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SIMILARITY: BELONGS TO THE CATION TRANSPORT ATPASES FAMILY
(E1-E2 APPASES). SUBFAMILY IB.
SIMILARITY: CONTAINS 2 HMA DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QVGRQLAIIGDDI
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Transmembrane; Phosphorylation; Magnesium; ATP-binding; ing; Copper; Repeat; Complete proteome.

163 POTENTIAL.
197 217 POTENTIAL.
229 249 POTENTIAL.
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Query Match Best Local Matches

Similarity 9; Conserv

Conservative

5; Mismatches

51.28; 47.48;

Score 43.5; Pred. No. 14

DΒ 1; 2

Length 532; Indels

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Gaps

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RESULT 10
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ID CRTILAPHSP
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RA APhano
OC Bacter
OX NCBLIT
RN [1] T
RN [1] T
RN SEQUEN
RC STRALN
RX SCHMId
RT SEQUEN
RC Gene 9
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DOMAIN
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01-MAY-1991 (Rel. 18, Last sequence update)
01-MAR-2002 (Rel. 41, Last annotation update)
Phytoene dehydrogenase (EC 1.14.99-.-) (Phytoene desaturase).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           *Cloning and nucleotide sequence of the crtI gene encoding phytoene dehydrogenase from the cyanobacterium Aphanocapsa PCC6714."; gene 91:113-117(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Aphanocapsa sp.
Bacteria; Cyanobacteria; Chroococcales; Aphanocapsa
NCBI_TaxID=1120;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CRTI_APHSP
P21134;
  NP_BIND
SEQUENCE
                                                                                                  EMBL;
                                                                                                                                                     modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-slb.ch/announce/or send an email to license@isb-slb.ch).
                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                     -!- FUNCTION: THIS ENZYME CONVERTS PHYTOENE INTO ZETA-CAROTENE VIA THE INTERMEDIARY OF PHYTOFLUENE BY THE SYMMETRICAL INTRODUCTION OF TWO DOUBLE BONDS AT THE C-11 AND C-11 POSITIONS OF PHYTOENE.
-!- COFACTOR: NAD, NADP, OR FAD (PROBABLE).
-!- PATHWAY: CAROTENOID BIOSYNTHESIS.
-!- SIMILARITY: BELONGS TO THE PHYTOENE DEHYDROGENASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-90382685; PubMed-2119326; Schmidt A., Sandmann G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-PCC 6714;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
     Carotenoid biosynthesis; Oxidoreductase; FAD; Flavoprotein; NAD NP_BIND 22 49 FAD (ADP PART) (POTENTIAL). SEQUENCE 532 AA; 56754 MW; 06296C65A914B19F CRC64;
                                                                             PIR; JN0084; JN0084.
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                                                                                                        M55647; AAA62573.1; -.
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COPPER (POTENTIAL).
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PHOSPHORYLATION (BY SIMILARITY).
MAGNESIUM (BY SIMILARITY).
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Pred. No. 18;
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17

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RESULT 11
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RESULT 12
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Best Local S
Matches 6
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PRINTS; PR00148; ENOLASE.
ProDom; PD000902; Enolase; 1.
PROSITE: PS00164; ENOLASE; 1.
Lyase; Glycolysis; Magnesium,
ACT_SITE 163 163
BY
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P26300;
P26300;
O1-MAY-1992
O1-MAY-1992
15-JUL-1999
Enolase (EC .91ycerate hy
PGH1.
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STRAIN-CV. SUPERSONIC;
MEDLINE-93044507; PubMed-1841726;
MEDLINE-93044507; PubMed-1841726;
MEDLINE-93044507; PubMed-1841726;
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PIR; JQ1185; JQ1185.
HSSP; P56252; 1PDZ.
Mendel; 611; LYCes; Pgh1; 2.
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Eukaryota; Viridiplantae: Streptophyta; Embryophyta; Tracheo Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Asteridae; euasterids I; Solanales; Solanaceae; Solanum.
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COFACTOR: MAGNESIUM IS REQUIRED FOR
THE DIMER (BY SIMILARITY).
PATHWAY: GLYCOLYSIS,
SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                s SWISS-PROT entry is copyright. It is produced through a collaboration ween the Swiss Institute of Bioinformatics and the EMBL outstation - European Bioinformatics Institute. There are no restrictions on its by non-profit institutions as long as its content is in no way ifted and this statement is not removed. Usage by and for commercial ities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUBCELLULAR LOCATION: Cytoplasmic. SIMILARITY: BELONGS TO THE ENGLASE FAMILY.
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                                                                                                                                                                                                          Similarity 6; Conser
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(Rel. 22, Last sequence update)
(Rel. 38, Last annotation update)
4.2.1.11) (2-phosphoglycerate dehydratase) (2-phospho-D-
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RESULT 13

ENO_ORYSA STANDARD; PRT; 446 AA.

ID ENO_ORYSA STANDARD; PRT; 446 AA.

AC Q42971;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 15-DEC-1998 (Rel. 37, Last annotation update)
DE Enolase (EC 4.2.1.11) (2-phosphoglycerate del DE glycerate hydro-lyase) (OSE1).

OS Oryza sativa (Rice).
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P42895;

01-NOV-1995 (Rel.

01-NOV-1995 (Rel.

30-MAY-2000 (Rel.

Enolase 2 (EC 4.2.
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SEQUENCE
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-!- COFACTOR: MAGNESIUM IS REQ
THE DIMER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lal S.K., Lee C., Sachs M.M.;
"Differential regulation of enolase during anaerobiosis in Plant Physiol. 118:1285-1293(1998).
-!- CATALYTIC ACTIVITY: 2-phospho-D-glycerate - phosphoenol
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Zea mays (Maize).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; PACC clade;
Panicoideae; Andropogoneae; Zea.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PROSITE; PS00164; I
Lyase; Glycolysis;
ACT_SITE 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRINTS; PR00148; ENOLASE.
PRODOM; PD000902; Enolase; 1.
PROSITE; PS00164; ENOLASE; 1.
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MEDLINE=99063764;
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- SUBUNIT: HOMODIMER.
- SUBCELLULAR LOCATION: C
- SIMILARITY: BELONGS TO
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95 (Rel. 32, Last sequence update)
90 (Rel. 39, Last annotation update)
(EC 4.2.1.11) (2-phosphoglycerate
te hydro-lyase 2).
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TO THE ENOLASE FAMILY.
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                                                                                                                    Caenorhabditis elegans.
Eukaryota; Metazoa; Nema
Rhabditidae; Peloderinaa
NCHI_TaxID=6239;
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- PATHWAY: GLYCOLYSIS.
-1- SUBUNIT: HOWODIMER (BY SIMILARITY).
-1- SUBCELLULAR LOCATION: CYTOPLASMIC.
-1- DEVELOPMENTAL STAGE: EXPRESSED DURING EARLY EMBRYOGENESIS.
-1- SIMILARITY: BELONGS TO THE ENOLASE PAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
STRAIN-CV. TAINUNG 67; TISSUE-Seed;
T.C., TSAO C.-W., Hsleh J.-S.,
 This
                                                                                                                                                                                                                                                                                                                   CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00164; Lyase; Glycolysis; ACT_SITE 164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Chow T.-Y.
"A rice early embryogenesis-specific enolase cDNA.";
"In Plant Gene Register PGR95-084.
"In CATALYTIC ACTIVITY: 2-phospho-D-glycerate - phosphoenolpyruvate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae; Ehrhartoldeae; Oryzeae; Oryza.
                          Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
                                                                  STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U09450; AAC49173.1; ... HSSP; P56252; 1PDZ. InterPro; IPR000941; Enclase.
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PRINTS; PR00148
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5; Mismatches
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Best Local s
Matches 9
Hydrolase; Transmembrane; P

Metal - binding; Copper; Repe

TRANSMEM 174 194

TRANSMEM 210 230

TRANSMEM 246 266

TRANSMEM 246 266

TRANSMEM 271 291

TRANSMEM 430 450

TRANSMEM 430 450
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Finan T.M., Weidner S., Wong K., Buhrmester J., Chain P.,
Vorhoelter F.J., Hernandez-Lucas I., Becker A., Cowie A., Gouzy J.
Golding B., Puehler A.;
Golding B., Puehler A.;
The complete sequence of the 1,683-kb pSymB megaplasmid from the
fixing endosymbiont Sinorhizoblum meilloti.*;
Proc. Natl. Acad. Sci. U.S.A. 98:9889-9894(2001).
I- FUNCTION: INVOLVED IN COPER TRANSPORT (BY SIMILARITY).
I- FUNCTION: INVOLVED IN COPER TRANSPORT (BY SIMILARITY).
I- CATALYTIC ACTIVITY: ATP + H(2)0 - ADP + ORTHOPHOSPHATE.
I- SUBCELLULAR LOCATION: Integral membrane protein (By Similarity
GEI-EZ ATPASES). SUBFAMILY IB.
GEI-EZ ATPASES). SUBFAMILY IB.
SIMILARITY: CONTAINS 2 HMA DOMAINS.
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                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb~sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                          PROSITE; PS00154; ATPASE_E1_E2; PROSITE; PS01047; HMA_1; 2. PROSITE; PS50846; HMA_2; 2.
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Search completed: September 20, 2002, 11:04:35 Job time: 1632~{\rm sec}
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Best Local Similarity 64.3%;
Matches 9; Conservative
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704 QGGRSVAFIGDGIN 717
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819 H
149 H
149 C
26 C
29 C
718 P
718 P
85861 MW;
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POTENTIAL.

HMA 1.

HMA 2.

COPPER (POTENTIAL).

COPPER (POTENTIAL).

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COPPER (POTENTIAL).

COPPER (POTENTIAL).

COPPER (POTENTIAL).

PHOSPHORYLLATION (BY SIMILARITY).

MAGNESIUM (BY SIMILARITY).

MAGNESIUM (BY SIMILARITY).
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Maximum Match 100%
Listing first 45 summaries
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1: sp_archea:*
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3: sp_fungi:*
4: sp_human:*
5: sp_invertebra:*
10: sp_plant:*
11: sp_rodent:
11: sp_virus:*
11: sp_unclass:
14: sp_unclass:
15: sp_vrirus:*
16: sp_archeap
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85
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Gapop 10.0 , Gapext 0.5
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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447	421	693	809	593	556	261	258	355	263	915	357	209	151	163	80	Query Match Length DB		
16	16	16	10	16	10	17	17	10	16	16	10		11	6	6	DB		
Q9CD42	Q98KM2	Q9PC32	Q9FG35	P73239	9THT6	057733	Q9UXV1	081716	8SD660	Q9KPZ7	Q9SZ53	Q9JK59	Q91WX5	Q9MZS6	077738	ID		SUMMARIES
Q9cd42 mycobacteri	Q98km2 rhizobium l	~	Q9fg35 arabidopsis	P73239 synechocyst	Q9lh16 arabidopsis	ω	Q9uxv1 pyrococcus	081716 arabidopsis	Q99us8 staphylococ	Q9kpz7 vibrio chol	Q9sz53 arabidopsis	Q9jk59 rattus norv	Q91wx5 mus musculu	Q9mzs6 ovis aries	077738 sus scrofa	Description		ES

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## ALIGNMENTS

Db Db	Quer Best Matc	SQ	H.L.	Ţ D	DR	D S		R	DR	DR	R.	R 7	Ž	RP	RN	×	8	8	S	o c	T	TT	AC	ID	RESULT 077738
2 GQVGRQLAIIGDDINR 17 	Query Match 94.1%; Score 80; DB 6; Length 80; Best Local Similarity 100.0%; Pred. No. 8.2e-06; Matches 16; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	SEQUENCE 80 AA; 8818 MW; FD1AF83BD7D59C86 CRC64;	NON_TER 80 80	; PS01259;	PROSITE; PS50062; BCL2_FAMILY; 1.	SMART: SMAO337: BCL 6, 1.	InterPro; IPROUU/12; Bc1_2.			4598.1;	Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.	Expression of apoptosis associated genes in hipernating and stunned and stunned	Partiting B., HOLLMAN J., HOLLZ K., HEUSCH G., Darmer D.,		[1]		ia; Cetartiodactyla; Suina; Suidae;		Sus scrofa (Pig)	BAK.	(TrEMBLrel. 08, Last	(TrEMBLrel.	077738;	O77738 PRELIMINARY; PRT; 80 AA.	LT 1 38

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"Bak in the sheep ovary ";
submitted (JUL-1999) to the EMBL/GenBank/DDBJ dail
EMBL; Ar164518; AAF89533.1; -.
HSSP; Q16611; IBXL.
InterPro; IPR0002475; BCL2_family.
InterPro; IPR000712; BCL2_family.
InterPro; IPR000712; BCL2_family.
Pfam; PF00452; BCL2-family.
PFAm; PF00452; BCL2_FAMILY; 1.
PROSITE; PS01080; BH1; 1.
PROSITE; PS01080; BH1; 1.
PROSITE; PS01259; BH3; 1.
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Q9MZS6;
Q9MZS6;
Q1-OCT-2000 (TrEMBLrel. 15, C
Q1-OCT-2001 (TrEMBLrel. 15, I
Q1-DEC-2001 (TrEMBLrel. 19, I
BAK PROTELN (FRACMENT).
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MEDLINE-2123300; PubMed-11278671;
Sun Y.E., Yu L.Y., Saarma M., Timmusk T., Arumae U.;
*Neuron-specific Bc1-2 homology 3 domain-only splice variant of Bak is
anti-apoptotic in neurons, but pro-apoptotic in non-neuronal cells.";
J. Biol. Chem. 276:16240-16247(2001).
EMBL; AR402617; AAL01876.1; -
SEQUENCE 151 AA; 16402 MW; 18C13BFF86E4F33B CRC64;
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Q91WX5;
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Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi;

Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea;

Bovidae; Caprinae; Ovis.

NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalla; Eutherla; Rodentia;
NCBI_TaxID=10090;
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pred. No. 2.6e-05;
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            Mismatches
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Best Local Similarity 93.
Matches 15; Conservative
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InterPro: IPR000712; Bcl_2.
Pfam; PF00452; Bcl_2: 1.
SMART; SM00337; BcL; 1.
PROSITE; PS01062; BCL2_FAMILY; 1.
PROSITE; PS01080; BH; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
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Q9JK59;
Q1-OCT-2000 (
Q1-OCT-2000 (
Q1-DEC-2001 (
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Q9SZ53;
Q1-MAY-2000 (TrEMBLrel. 13, Created)
Q1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
PROTEIN PHOSPHATASE 2C-LIKE PROTEIN (AT4G31860/F11C18_60).
F11C18.60 OR AT4G31860
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
NCBL_TaxID-3702;
                                                                                                                                                     SEQUENCE FROM N.A.
Bevan M., Terryn N., Ardiles W., Buysshaert C., Das Bevan M., Terryn N., Ardiles W., Buysshaert C., Van De Clerck R., De Keyser A., Neyt P., Rouze P., Van Villaroel R., Gielen J., Van Montagu M., Hoheisel J Mayer K.F.X., Schueller C.; Submitted (APR-1999) to the EMBL/GenBank/DDBJ datab
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EU Arabidopsis sequencing project;
Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutharia; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
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InterPro; IPR000222; PP2C_IOMAIN.
InterPro; IPR001932; PP2C_IOMAIN.
Pfam; PF00481; PP2C; 2.
SMARP; SM00331; PP2C; 1.
SMARP; SM00331; PP2C; 1.
SMARP; SM00331; PP2C_SIG; 1.
PROSITE; PS011032; PP2C; 1.
SEQUENCE 357 AA; 39203 MW; 98EE
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Q9KPZ7;
01-OCT-2000
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STRAIN-EL TOR N16961 / SEROTYPE 01;

MEDLIND-20466835 PubMed-10952301;

Heidelberg J.F., Eisen J.A., Nelson W.C., Clayton R.A., Gwinn M.L.,

Dodson R.J., Haft D.H., Hickey E.K., Peterson J.D., Umayam L.A.,

Gill S.R., Nelson K.E., Read T.D., Tettelin H., Richardson D.,

Ermolaeva M.D., Vamathevan J., Bass S., Qin H., Dragoi I., Sellers P.,

McDonald L., Utterback T., Fleischmann R.D., Nierman W.C., White O.,

Salzberg S.L., Smith H.O., Colwell R.R., Mekalanos J.J., Venter J.C.,

Fraser C.M.;
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EU Arabidopsis sec
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Vibrio cholerae
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                                                Nature 406:477-483(2000)
EMBL; AE004293; AAF95359
HSSP; P04129; 1AFJ.
TIGR; VC2215;
                                                                                                                                                            cholerae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=666;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria;
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                                                                                                                                                                                *DNA sequence of both
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10; Conserv
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IPR000579;
IPR001757;
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Cat_P_ATPaseA
E1-E2_ATPase.
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-E2 FAMILY.
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Pred. No. 10;
5; Mismatches
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InterPro; IPR001934; HNA.
InterPro; IPR001934; Hydrolase.
InterPro; IPR00150; Hypothet_cof.
Pfam; PF00122; E1_E2_ATPase; 1.
Pfam; PF00403; HVA; 3
Pfam; PF00403; HVA; 3
Pfam; PF00702; Hydrolase; 1.
PRINTS; PR00916; CATPASE.
PRINTS; PR00946; HGSCAVENGER.
PROSITE; PS01229; COF2; UNKNOWN_1.
PROSITE; PS01229; COF2; UNKNOWN_1.
PROSITE; PS01229; COF2; UNKNOWN_1.
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01-JUN-2001 (TrEMBLrel. 17, C
01-JUN-2001 (TrEMBLrel. 17, L
01-DEC-2001 (TrEMBLrel. 19, L
HYPOTHETICAL PROTEIN SA1030 (
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                            SPECIES=S.aureus (strain N315), and S.aureus (strain Mu50);
MEDLINB=21311952; PubMed=11418146;
Kuroda M., Ohta T., Uchiyama I., Baba T., Yuzawa H., Kobayashi I.,
Cui L., Oguchi A., Aoki K.-I., Nagai Y., Lian J.-Q., Ito T.,
Kaoamori M., Matsumaru H., Maruyama A., Murakami H., Hosoyama A.,
Mizutani-Ui Y., Takahashi N.K., Sawaho T., Inoue R.-I., Kaito C.,
Sekimizu K., Hirakawa H., Kuhara S., Goto S., Yabuzaki J.,
Kanehisa M., Yamashita A., Oshima K., Furuya K., Yoshino C., Shiba
Hattori M., Ogasawara N., Hayashi H., Hiramatsu K.;
"Whole genome sequencing of meticillin-resistant Staphylococcus
aureus."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Staphylococcus aureus (strain N315), and Staphylococcus aureus (strain Mu50).
Bacteria; Firmicutes; Bacillus/Clostridium gro Bacillus/Staphylococcus group; Staphylococcus.
NCBI_TaxID-158879, 158878;
                                                                                                                                                                                                                                InterPro; IPR003730; DUF152.
pfam; PR02578; DUF152; 1.
pfam; PR02578; DUF152; 1.
Complete SEQUENCE 263 AA; 30257 MW;
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EMBL; AP003132; BAB42282.1;
EMBL; AP003361; BAB57349.1;
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915 AA;
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261
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75
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Last annotation update)
(HYPOTHETICAL PROTEIN SAV1187).
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                                                                                                                        Score 45;
Pred. No.
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Pred. No. 52;
                                                                                                  ced. No. 19;
Mismatches
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7AB013BD94EB07F9
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                                                                                                                                                  Length 263;
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RESULT 081716

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RESULT
Q9UXV1
ID QS
AC QS
DT 0
DT 0
DT 0
DT 0
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RM Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.

RMBL: ACO06585 AAD23006.1; -. RMBL: AV050873, AKS28106.1; -. RMBL: AV050873, AKS2810.1; -. RMBL: AV050873, AKS2810.1; -. RMBL: Submitted (JUL-2001) to the SMBL/GenBank/DDBJ databases.

RMBL: RY001932: PP2C. Jomain.

RMART: SM00331: PP2C.SIG; 1.

RMART: SM00331: PP2C.SIG; 1.
                                                                                                                                                                                                                        Query Match
Best Local S
Matches 9
Q9UXV1;
Q9UXV1;
Q1-MAY-2000
Q1-MAY-2000
Q1-DEC-2001
SY V-ATPASE
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MEDLINE-20083487; PubMed-10617197;

Lin X., Kaul S., Rounsley S.D., Shea T.P., Benito M.-I., Town C.D.,

Fujii C.Y., Mason T.M., Bowman C.L., Barnstead M.E., Feldblyum T.V.,

Buell C.R., Ketchum K.A., Lee J.J., Ronning C.M., Koo H., Moffat K.S.,

Cronin L.A., Shen M., Vanaken S.E., Umayam L., Tallon L.J., Gill J.E.,

Adams M.D., Carrera A.J., Creasy T.H., Goodman H.M., Somerville C.R.,

Copenhaver G.P., Preuss D., Nierman W.C., White O., Eisen J.A.,

Copenhaver G.P., Fraser C.M., Venter J.C.;

"Sequence and analysis of chromosome 2 of the plant Arabidopsis

thaliana.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AT2G25070.

Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnollophyta; eudicotyledons; core eudicots; Rosidae;

eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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081716;
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01-NOV-1998 (TrEMBLrel. 08, La
01-DEC-2001 (TrEMBLrel. 19, La
HYPOTHETICAL 39.4 KDA PROTEIN.
                                                                                                                                                                                                                                                                                                    Hypothetical SEQUENCE 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (MAR-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN-CV.
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                                                                                                                                                            QGQRGWRELAVLGDKMNK 120
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9; Conser
               (TrEMBLrel.
(TrEMBLrel.
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   PROTEOLIPID
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                                                                                PRELIMINARY;
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Pred. No. 32;
6; Mismatches
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               sequence update) annotation update)
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Matches 7
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057733;
01-AUG-1998
01-AUG-1998
01-DEC-2001
                                                                                                                                                                                               MEDLINE=98344137; PubMed=9679194;
Kawarabayasi Y., Sawada M., Horikawa H., Haikawa Y., Hino Y
Yamamoto S., Sekine M., Baba S.-I., Kosugi H., Hosoyama A.,
Sakai M., Ogura K., Otsuka R., Nakazawa H., Takamiya M., Oh.
Funahashi T., Tanaka T., Kudoh Y., Yamazaki J., Kushida N.,
Aoki K.-I., Yoshizawa T., Nakamura Y., Robb F.T., Horikoshi
Masuchi Y., Shizuya H., Kikuchi H.;
"Complete sequence and gene organization of the genome of a
                                                                                                                                                                                                                                                                                                                             Pyrococcus horikoshii.
Archaea; Euryarchaeota;
NCBI_TaxID=53953;
                                                                                                     Complete proteome. SEQUENCE 261 AA;
                                                                                                                           InterPro; IPR004089; Chemotaxis_transducer
Pfam; PF00015; MCPsignal; 1.
SMART; SM00283; MA; 1.
                                                                                                                                                              thermophilic archaebacterium, Pyrococcus DNA Res. 5:55-76(1998).
EMBL; AP000007; BAA3197.1;
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
STRAIN-OT3;
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InterPro; IPR004090; Me_chemotaxis.
Pfam; PF00015; MCPsignal; 1.
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structure and evolution.",
Submitted (JUL-1999) to the
EMBL; AJ248288; CAB50662.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Archaea; Euryarchaeota; Thermococcales; NCBI_TaxID=29292;
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125
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GEAGRGFAVVADEIRR 140
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SM00283; MA;
                                           Similarity 43.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity 43. 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                             8 (TremBirel. 07, Created)
8 (TremBirel. 07, Last sequence update)
1 (TremBirel. 19, Last annotation update)
1 HYPOTHETICAL CHEMORECEPTOR PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
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                                                                                                        29234 MW;
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                     17
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                                           Score 44; DB
Pred. No. 27;
4; Mismatches
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Pred. No.
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                                                                                                      2FDDC7CC08223D46 CRC64;
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                                                         DB
27;
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27;
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horikoshii OT3.";
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Euku Y.,
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RESULT

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RA Salanoubat M., Lemcke K., Rieger M., Ansorge W., Unseld M.,
Ra Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
Ra Fartmann B., Valle G., Bloecker H., Perez-Alonso M., Obermaier B.,
Ra Delseny M., Boutry M., Grivell L.A., Merez-Alonso M., Obermaier B.,
Ra De Simone V., Choisne N., Artiquenave F., Robert C., Brottier P.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wincker P., Cattolico L., Weissenbach J., Saurin W., Quetier F.,
Ra Wiedelmann R., Kranz H., Voss H., Holland R., Brandt P., Nyakatura G.,
Ra Wezzi A., D'Angelo M., Pallavicini A., Toppo S., Simionati B.,
Ra Conzad A., Hornischer K., Kauer G., Loehnert T.-H., Nordslek G.,
Ra Reichelt J., Scharfe M., Schoen O., Bargues M., Terol J., Climent J.,
Ra Rochert D., Collado C., Perez-Perez A., Cottenwaelder B., Duchemin D.,
Ra Rocher P., Collado C., Perez-Perez A., Cottet A., Casacuberta E.,
Ra Monfort A., Argiriou A., Flores M., Liquen G., Wasuy D.,
Ra Mannhaupt G., Haase D., Schoof H., Rudd S., Zaccaria P., Mewes H.-W.,
Ra Mayer K.F.X., Kaul S., Town C.D., Koo H.L., Tallon L.J., Jenkins J.,
Ra Rochey T., Riazo M., Walts A., Utterback T., Fujii C.Y., Shea T.P.,
Ra Rochey T., Riase D., Maiti R., Wu D., Peterson J., Van Aken S.,
Ra Pai G., Militscher J., Sellers P., Gill J.E., Feldblyum T.V.,
Ra Rasamoto S., Kimura T., Idesawa K., Kawashima K., Kishida Y.,
Ra Kiyokawa S., Nakazaki N., Shinpo S., Takeuchi C., Wada T.,
Ra Watanabe A., Yamada M., Yasuda M., Tabata S.;
Ra Yasquence and analysis of chromosome 3 of the plant Arabidopsis
Вþ
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                                                                                        Query Match
Best Local
                                                                       Matches
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosid
eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-JUN-2001 (TrEMBLrel. 17, GB|AAF30301.1 (HYPOTHETICAL T21B14.12.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Structural analysis of Arabidopsis thaliana chromosome 3. II. Sequence features of the regions of 4,251,695 bp covered by ninety P1, TAC and BAC clones.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=21016720; PubMed=11130713;
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STRAIN-CV. COLUMBIA;
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                                                                                                                                                                 Hypothetical protein SEQUENCE 556 AA;
                                                                                                                                                                                                                                            Nature 408:820-822(2000).
 262 GRRLVFVGDSLNR
                                 5 GROLATIGDDINR 17
                                                                                                                                                                                                     AP002040; BAB03118.1; AC069473; AAG51057.1;
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. 7:217-221(2000).
                                                                     Similarity 7; Conserv
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Last annotation updat
63.0 KDA PROTEIN).
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                                                                                          Score 44;
Pred. No.
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64;
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PRESULT PARESULT PARE
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Matches 8; Conser
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P73239;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,
Hosouchi T., Matsuno A., Muraki A., Nakazaki N., Naruo K., Okumu
Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda
Tabata S.;
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Interpro; IPR003593; AAA.
Interpro; IPR001140; ABC_trai
Interpro; IPR003439; ABC_trai
Interpro; IPR003687; APL_GTP.
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Bacteria; Cyanobacteria; Chroococcales;
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Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;
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                                   "Structural analysis of Arabidopsis thaliana c
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ
EMBL, AP002032; BAB09804.1;
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Tabata S.;
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Tanaka A., Asamizu E., Kimura T
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RA Alvarenga R., Alves L.M. C., Arraya J.E., Bala G.S., Baptista C.S.,
RA Barros M.H., Bonaccorsi E.D., Bordin S., Bove J.M., Briones M.R.S.,
RA Bueno M.R.P., Camargo A.A., Camargo L.E.A., Carraro D.M., Carrer H.,
RA Colauto N.B., Colombo C., Costa F.F., Costa M.C.R., Costa Neto C.M.,
RA Coutinho L.L., Cristofani M., Dias-Neto E., Docena C., El Dorry H.,
RA Facincani A.P., Ferreira A.J.S., Ferreira V.C.A., Ferro J.A.,
RA Fraga J.S., Franca S.C., Franco M.C., Frohme M., Furlan L.R.,
RA Fraga J.S., Kurannae E.E., Laigret F., Combes S.L., Kitajima J.P.,
RA Krieger J.E., Kurannae E.E., Laigret F., Lambais M.R., Leite L.C.C.,
RA Machado M.A., Madeira A.M.B.N., Madeira H.M.F., Marino C.L.,
Menck C.F.M., Miracca E.C., Miyaki C.Y., Monteiro-Vitorello C.B.,
RA Mannak C.F.M., Miracca E.C., Miyaki C.Y., Monteiro-Vitorello C.B.,
RA Moon D.H., Nagai M.A., Nascimento A.L.T.O., Netto L.E.S.,
RA Mannak C.F.M., Mobrega F.G., Nunes L.R., Oliveira M.A.,
RA Menck C.F.M., M.C., de Oliveira R.C., Palmieri DA., Paris A.,
RA Quaggio R.B., Roberto P.G., Rodrigues V., de Rosa A.J.M.,
RA de Solveira M.C., de Oliveira R.C., Santelli R.V., Sawasaki H.E.,
RA de Solveira J.F., Silvestri M.L.Z., Siqueira W.J., de Souza A.A.,
RA de Souza A.P., Terenzi M.F., Truffi D., Tsai S.M., Tshako M.H.,
RA Cago M.A., Zatz M., Meldanis J., Setubal J.C.;
RT "The genome sequence of the plant pathogen Xylella fastidiosa.";
RD Nature 406:151-159(2000).
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NCBI_TaxID-2371;
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Xylella fastidiosa
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InterPro; IPR001327; FAD_pyr_redox.
InterPro; IPR00733; Ilavo_monooxygenase.
InterPro; IPR002938; Moxy_FAD_binding.
InterPro; IPR001035; NAD_binding.
InterPro; IPR0010103; Pyr_Idine_redox_2.
InterPro; IPR001100; pyr_redox.
InterPro; IPR001010; pyr_redox.
InterPro; IPR001042; Rng_mnoxygenase.
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EMBL; APO02997; BAH86792.1; -. InterPro; IPR000750 A3--3
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Copyright

GenCore version 4.5 (c) 1993 - 2000 Comp

Compugen Ltd

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                                                                                                                                                                                                                                                                                                                                                                                                                                Score
                 \begin{smallmatrix} 1 & 2 & 3 & 3 & 4 \\ 2 & 3 & 3 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 3 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 & 4 & 4 & 4 \\ 2 
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2: /SIDS1/gcgdata/hold-geneseq/geneseqp-embl/AA1981.DAT: *
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## ALIGNMENTS

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XX AAB Cytostatic; neuroprotective; anti-HIV; virucide; cerebroprotective; cardiant; Bcl-2 superfamily; BH3 domain; cell death agonist; Bad; apoptosis modulation; B cell lymphoma/leukemia 2; cancer; prostate; colorectal; gastric; non-small lung; renal; thyroid; neuroblastoma; melanoma; lymphocytic leukemia; neurodegenerative disorder; AIDS; Huang Z, 07-APR-1999; 06-APR-2000; 2000WO-US09352 W0200059526-A1 stroke; myocardial infarction Bcl2 polypeptide BH3 domain peptide #6. (UYJE-) UNIV JEFFERSON THOMAS 12-OCT-2000 Homo sapiens. AAB37006; AAB37006 standard; peptide; 28-FEB-2001 ... Wang J, Zhang Z, (first entry) 99US-0128202. Shan 27 ĄΑ ß Ę 2

New peptide conjugates for modulating apoptosis or for inhibiting

WPI; 2000-679325/66

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RESULT AAY70818 ID AAY70818 ID AAY70818 ID AAY7 XX AAY7 XX Huma XX Huma KW Huma KW Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Homc COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS Home COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS HOME COS H
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CC (R-X)n-peptide where n = 1-10; X = C=0, when the R-X group is attached Ct to the N-terminus of the peptide, or a side chain of the peptide where CC the functional group of the side chain is NH2 or OH; or X = O or NH, CC when the R-X group is attached to the C-terminus of the peptide, or a CC side chain of the peptide, where the side chain functional group is COH CC or CONH2; and R = 2-18C alkyl or alkoxy, 2-14C alkylenyl containing one CC or two double bonds, cyclobutyl, cyclopentyl, cyclohexyl optionally CC monosubstituted with a 1-5C straight or branched chain alkyl group, or benzyl. The peptides AAB37001-B37058 represent analogues of the peptide portion of the conjugate. The peptides represent analogues of the peptide portion of the conjugate. The peptides represent analogues of a subject of a pepticularity polypeptide corresponding to amino acids 72-97 of the BH3 domain of the cell death agonist Bad. The peptide conjugate is cuseful for modulating apoptosis in the cells of a subject, or for CC useful for modulating apoptosis in the cells of a subject, or for CC apoptosis in cancer cells. It is also useful for inhibiting Bcl-2 (CC apoptosis in cancer characterized by cancer cells that CC express Bcl-2. The cancer includes prostate, colorectal, gastric, conjugate is also useful for treating a colorectal, gastric, conjugate is also useful for treating disorders, acquired confurence (AIDS), stroke or mycoardial infartion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 100.
Best Local Similarity 100.
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human neuroprotective truncated BAX protein, tBAX78.
   22-OCT-1998;
                                                                  22-OCT-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    neuron; anti-apoptotic; cerebroprotective; neuroprotective; neuroactive; apoptosis; treatment; neurodegenerative disease; peripheral nerve injury;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-JUL-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAY70818;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cell lymphoma/leukemia 2 (Bcl-2) function, especially useful for treating neurodegenerative disorders, stroke, or cancer
                                                                                                                                        27-APR-2000.
                                                                                                                                                                                                          WO200023083-A1.
                                                                                                                                                                                                                                                                                                                                                                                Region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          spinal cord injury; head trauma; stroke.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human; truncated BAX protein; tBAX78; BAX alpha; BCL-2 family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAY70818 standard; Protein; 78 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunodeficiency syndrome (AIDS), stroke
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98US-0177315
                                                                  99WO-US24747
                                                                                                                                                                                                                                                                                                          /note- "N-terminal region of BAX alpha" 59..73
                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                         /label= BH3_domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Score 135; DB 21; 100.0%; Pred. No. 1.1e-12; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a peptide conjugate
1-10; X = C=0 ...-
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Best Local S
Matches 27
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                                            New adenovirus vectors, cells and for treating
                                                                                                                      WPI; 1999-551404/46.
N-PSDB; AAZ19763.
                                                                                                                                                                                             McDonnell TJ,
Ji L, Roth JA;
                                                                                                                                                                                                                                                                                                                        11-MAR-1998;
                                                                                                                                                                                                                                                                                                                                                                          11-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                         16-SEP-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Apoptosis; adenovirus; dimeric;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human truncated Bax protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-NOV-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Johnson EM,
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                                                                                                                                                                                                                       Swisher SG,
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                                                                                                                                                                                                                                                                                                                                                                       99WO-US05359
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Portion of BH3
                                                 used for killing or cancers -
                                                                                                                                                                                                                       Fang
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Pred. No. 3.1e-12;
; Mismatches 0;
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                                                                                                                                                                                                                         Bruckheimer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     p53; cancer; gene therapy
                                                                         inhibiting the growth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          essential for dimerisation"
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Claim 26;

Page 148-149;

151pp; English

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CC contains a single base deletion relative to the wild-type (ARX19764),
CC causing a frameshift which leads to translation of a premature stop
CC codon, resulting in a truncated protein. However, the domain responsible
CC for its function is still present in the truncated protein. Bax (Bcl-2
CC associated X protein) is a proapoptotic member of the Bcl-2 gene family.
CC Bax functions as a primary response gene in the p53-regulated apoptotic
CC expression of Bax is upregulated at the transcriptional level by p53, and
CC expression of Bax is upregulated at the transcriptional level by p53, and
CC expression of Bax protein can function as a homodimer, or it can
CC induction of p53. Bax protein can function as a homodimer, or it can
CC provides a means of controlling cell death of Bcl-2 family members
CC model suggests that the relative amounts of Bcl-2 and Bax determine the
CC susceptible to apoptosis following exposure to an apoptotic stimulus.
CC Additionally, Bax can function in its monomeric form to accelerate cell
CC death. Use of novel adenoviral vectors containing this Bax gene may
CC cell cycle arrest and/or apoptosis in malignant cells carrying p53
CC mutations. In addition, Bax overexpression could provide the apoptotic
CC effect of p53 without the need for p53 itself.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                  Human; bcl-2; alpha; beta; proto-oncogene; hematopoietic cell line; apoptosis; membrane-associated cytoplasmic protein; B cell; T cell; proliferation; cell cycle progression; Bax; apoptotic cell death; apoptosis; cytokine; death repressor; BH1; BH2; cancer therapy; hyperplasia; immunodeficiency disease; AIDS; neurodegeneration;
WPI; 1995-106605/14.
N-PSDB; AAQ97606.
                                                                                                                        26-AUG-1993;
25-MAY-1994;
                                                                                                                                                                             24-AUG-1994;
                                                                                                                                                                                                          02-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-NOV-1995 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR71406 standard; Protein; 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This sequence represents a human truncated Bax protein. The cDNA
                                                    Korsmeyer SJ;
                                                                                     (UNIW ) UNIV
                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                            Human Bax protein.
                                                                                                                                                                                                                                                                                                                   ischaemic cell death.
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27; Conserv
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                                                                                       WASHINGTON
                                                                                                                      93US-0112208
94US-0248819
                                                                                                                                                                             94WO-US09701.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 131;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0
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This sequence represents human Bax protein. Bax is a protein which is CC associated with the human bc1-2 alpha and beta proteins, the sequences cof which are given in AAR71404-05 respectively. bc1-2 is encoded by a CC proto-oncogene and is capable of inhibiting apoptosis in many cc hematopoietic cell systems. bc1-2 is a 26 kD membrane-associated CC tytoplasmic protein and is thought to function by enhancing the survival cof hematopoietic cells of B and T origins rather than directly promoting CC promote cell cycle progression nor does it necessarily alter the dose reponse to limiting concentrations of II-3. bc1-2 has been shown to CC form heterodimers with this 21 kD protein, Bax. Overexpressed Bax CC accelerates apoptotic cell death induced by cytokine deprivation in an CC II-3 dependent cell line, and it also acts to counter the death repressor activity of bc1-2. Therefore, the ratio between bc1-2 and Bax determines CC cell survival or death following an apoptotic stimulus. The invention CC gives a mutant form of bc1-2 in which there is at least one amino acid CC substitution or deletion in the BHI or BH2 domains. This makes the CC mutant protein substantially incapable of binding Bax and/or incapable collages in autiformulation between the activity by faccinate in a protein substantially incapable of binding Bax and/or incapable collages in autiformulation between the activity by faccinate and catherines and eliminating self-reactive
                                                                                                                                                         clones in autoimmunity by favouring death effector molecules. Up regulating bcl-2is beneficial in treatment and diagnosis of immunodeficiency diseases, including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and including AIDS and neurodegenerative and ischamble and ischamble and including AIDS and neurodegenerative and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and ischamble and isc
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Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       that lack death repressor activity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Methods for producing and identifying mutant bcl-2 proteins
192 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; 133pp; English.
                                                                                                                                                                            AIDS and neurodegenerative and ischaemic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and/or lacks binding to Bax
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RESULT
AAY34150
                                                                                                                                                                                                                                                                               20
                                                                                                                                                                                                                                                                В
                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                       Query Match
Best Local
                                                                                                               Domain
                                                                                                                        Key
                                                                                                                                                       Apoptosis; adenovirus; dimeric; Bcl-2; p53; cancer; gene therapy
                                                                                                                                                                      Human wild-type Bax protein
                                                                                                                                                                                      30-NOV-1999 (first entry)
                                                                                                                                                                                                        AAY34150;
                                                                                                                                                                                                                        AAY34150 standard; Protein; 192
                                                                       16-SEP-1999
                                                                                       WO9946371-A2
                                                                                                                                        Homo
                                                                                                                                                                                                                                                              52 qdastkklseclkrigdeldsnmelqr 78
                                                                                                                                                                                                                                                                        1 QDASTKKLSECLKRIGDELDSNMELQR 27
                                                                                                                                                                                                                                       S
                                                                                                                                       sapiens
                                                                                                                                                                                                                                                                                               l Similarity 100.
27; Conservative
                                                                                                                Location/Qualifiers 59..101
                                                                                                                                                                                                                                                                                              100.0%; Score 135; DB 16; 100.0%; Pred. No. 7.9e-12; tive 0; Mismatches 0;
                                                                                                       *Portion of BH3 domain
                                                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                        A
                                                                                                       essential for dimerisation"
                                                                                                                                                                                                                                                                                                              Length
                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                192;
                                                                                                                                                                                                                                                                                                0,
                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                0;
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McDonnell TJ, Ji L, Roth J

Roth JA;

Swisher SG,

Fang

8

Bruckheimer EM,

MG

11-MAR-1998; 11-MAR-1999;

98US-0077541 99WO-US05359

(TEXA ) UNIV TEXAS SYSTEM

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AAYO5435
ID AAYO
XX
AC AAYC
AC AAYC
AC AAYC
DT 02-2
XX
Humm
XX
BH3
KW BH3
KW Butt
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HOM
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PD 08-
PF 22-
PF 22-
PF 22-
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PF 27-
PR 26-
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                in excess, however, Bax homodimers predominate and the cell becomes susceptible to apoptosis following exposure to an apoptotic stimulus. Additionally, Bax can function in its monomeric form to accelerate cell death. Use of novel adenoviral vectors containing the Bax gene may augment and complement wild-type p53 gene therapy, which induces a cell cycle arrest and/or apoptosis in malignant cells carrying p53 cell cycle arrest and/or apoptosis in malignant cells carrying p53
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     induction of p53. Bax protein can function as a homodimer, or it can heterodimerise with other Bc1-2 gene family members such as the antispoptotic protein Bc1-2. Heterodimerisation of Bc1-2 family members provides a means of controlling cell death via the "rheostat" model. This model suggests that the relative amounts of Bc1-2 and Bax determine the susceptibility of a cell to undergo apoptosis. If Bc1-2 is in excess, Bc1-2 Bax heterodimers predominate and cell death is inhibited. If Bax is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bax functions as a primary response gene in the p53-regulated apoptotic pathway. The Bax gene promoter has 4 p53 binding sites and the expression of Bax is upregulated at the transcriptional level by p53, ar Bax mRNA and protein expression have been shown to increase following induction of p53. Bax protein can function as a homodimer, or it can be be a simple of p53. Bax protein can function as a homodimer, or it can be protein the protein can function as a homodimer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BH3 domain; cell death agonist; bcl homology domain; BCL-2 family; apoptosis promoter; cancer cell; virus infected cell; inflammation; autoantibody producing cell; cancer; lymphoproliferative condition;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence represents human wild-type Bax protein. A naturally occurring mutant protein (AAY34149) was also isolated. Bax (Bcl-2 associated X protein) is a proapoptotic member of the Bcl-2 gene family.
Korsmeyer SJ
                                                                      (UNIW ) UNIV WASHINGTON.
                                                                                                                                         07-OCT-1997;
26-SEP-1997;
                                                                                                                                                                                                                                           22-SEP-1998;
                                                                                                                                                                                                                                                                                                              08-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                 WO9916787-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                arthritis; autoimmune disease; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human BAX protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            02-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY05435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAY05435 standard; peptide; 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 149-150; 151pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New adenovirus vectors, used for killing or inhibiting the growth of cells and for treating cancers .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         σ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ons. In addition, Bax overexpression could provide the apoptotic of p53 without the need for p53 itself.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        192 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                     97US-0946039.
97US-0060133.
                                                                                                                                                                                                                                           98WO-US19765
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 135; DB 20; 100.0%; Pred. No. 7.9e-12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
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RESULT
AAW87804
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Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                            10-NOV-1994;
26-AUG-1993;
25-MAY-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence represents the human BAX protein. The invention relates to a bcl homology domain 3 (BH3 domain), derived from a proapoptotic member of the BCL-2 family. The BH3 polypeptide can be used in a method for promoting apoptosis in a target cell, especially where the cell is a cancer cell a virus infected cell or an autoantibody producing cell. The BH3 polypeptide can be used in therapeutic compositions for treating disease including cancer, other lymphoproliferative conditions, arthritis, inflammation, and autoimmune diseases, which may result from the down regulation of cell death
                              DNA composition encoding bcl-2 two-hybrid and reporter system - identifying modulators of bcl-2 function
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI;
                                                                                                Korsmeyer
                                                                                                                                                                                                             05-JAN-1999
                                                                                                                                                                                                                                   US5856171-A
                                                                                                                                                                                                                                                                                                     Key
                                                                                                                                                                                                                                                                                                                                                                               A human Bcl-2 associated
                                                                N-PSDB; AAV84005
                                                                                                                    (UNIW ) UNIV WASHINGTON
                                                                                                                                                                                       10-NOV-1994;
                                                                                                                                                                                                                                                                   Domain
                                                                                                                                                                                                                                                                                         Domain
                                                                                                                                                                                                                                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                               bcl-2-related
                                                                                                                                                                                                                                                                                                                                                         Human; Bcl-2 associated protein; Bax; bcl-2; antibody; modulator;
                                                                                                                                                                                                                                                                                                                                                                                                     10-MAR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                           AAW87804
                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW87804 standard; Protein; 192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            regulation.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 21c; 104pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bcl homology domain 3 polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 QDASTKKLSECLKRIGDELDSNMELQR 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     7
                                                                          1999-105119/09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qdastkklseclkrigdeldsnmelgr 78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       192
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                           94US-0337646.
93US-0112208.
94US-0248819.
                                                                                                                                                                                                                                                                                                                                              function; apoptosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                       94US-0337646
                                                                                                                                                                                                                                                                  /note= "BH1 domain" 146..168
                                                                                                                                                                                                                                                                                        Location/Qualifiers 97..118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     100.0%;
                                                                                                                                                                                                                                                         "BH2 domain'
                                                                                                                                                                                                                                                                                                                                                                              protein designated Bax.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 135; DB 20;
Pred. No. 7.9e-12;
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Example 1; Columns 71-74; 105pp; English

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AAW87809
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26-AUG-1993;
25-MAY-1994;
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                                                                                                                                   Sequence
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tive 0; Mismatches 0;
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                                                                                                        The present sequence is a human BAX alpha protein, a pro-apoptotic protein which is a member of BCL-2 family of proteins that are involved in regulation of neuronal programmed cell death. The patent discloses specific truncated proteins derived from BAX alpha which inhibit neuronal apoptosis induced by trophic factor deprivation. The anti-apoptotic truncated BAX (tBAX) proteins include tBAX70, tBAX78 and their mutants. These proteins contain the N-terminal region and at least a portion of the BH3 domain of BAX alpha and lack the BH1, BH2 and C-terminal transmembrane domains. The tBAX protein lacking only the transmembrane domain has been shown to have anti-apoptotic activity. The tBAX proteins are used to treat diseases associated with neuronal appropriate activity appropriate and contains.
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                                                            spinal cord injury, head trauma
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                                                                     e.g. neurodegenerative diseases, peripheral nerve injury,
d injury, head trauma and stroke.
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/note= "BCL-2 Homo]
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                                                                                                                                                          The present sequence represents the Bax protein. A pro-apoptotic peptide can be derived from the BH3 domain. The peptide is an inducer of formation of a channel for transport of cytochrome C out of mitochondria. The peptide induces apoptosis in a cell. The peptide changes the ion selectivity of an anti-apoptotic BCL-2 family member from potassium selective to chloride selective. The specification cause describes inhibitors of apoptosis in cells. The inhibitors and inducers can be used to treat patients, preferably humans with a condition mediated by excessive down-regulation of apoptosis, especially conditions chosen from neoplasias, disease caused by Epstein Barr virus, African swine fever virus and adenovirus, inflammation and autoimmune disease or a condition mediated by conditions, cancer, arthritis, Crohn's disease, inflammation and autoimmune disease or a condition cell death, neurodegenerative disease, ischemic and reperfusion cell death, infertility and wounds. The methods can also be used to identify
                                                          Query Match
Best Local :
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                                            Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytochrome C transport; mitochondria; apoptosis; ion selectivity; anti-apoptotic BCL-2 family member; neoplasia; Epstein Barr virus; African swine fever virus; adenovirus; lymphoproliferative condition; cancer; arthritis; Crohn's disease; inflammation; autoimmune disease; immunodeficiency; senescence; neurodegenerative disease; reperfusion cell death; infertility; wound.
                                                                                                                     Sequence
                                                                                                                                                  apoptosis-modulating
                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 34; 57pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modulating apoptosis in cells by modulating channel ion transport of cytochrome C -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-195193/17
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pro-apoptotic peptide; Bax; BH3 domain; channel inducer; transport;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Amino acid sequence of the human Bax protein.
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                                        The present invention relates to a method of modulating apoptosis of a cell. The method comprises administrating to the cell an agent, comprising a BH1 domain or BH2 domain, capable of modulating formation c at least one complex selected from bcl-2:bcl-2 complexes, bcl-XL:bcl-XL complexes, bcl-2 associated X protein (Bax):Bax complexes, bcl-XL:Bax complexes or bcl-XL:Bax complexes. Modulating apoptosis is especially useful in cancer therapy, and treating autoimmunity, immunodeficiency diseases (e.g. AIDS), reperfusion injury, mycoardial infarction, stroke, traumatic brain injury, neurodegenerative diseases, aging, ischaemia, toxemia, infection, hepatitis, transplant rejection, and tymphoproliferative diseases. The present sequence is human Bax, which
                                                                                                                                                                                                                                                                                                                                                                                                                                                              10-NOV-1994;
26-AUG-1993;
25-MAY-1994;
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                                                                                                                                                                                                                                                                      Modulating apoptosis of a cell, useful in maintaining homeostasis in adult tissues, or treating proliferative or autoimmune diseases, comprises administering a bol-2 polypeptide that interacts with a 21 bcl-2 associated x protein
Sequence
                                                                                                                                                                                                                                         Claim 3; Fig 3; 105pp; English.
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DB; AAF77704.
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93US-0112208.
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26-AUG-1993;
25-MAY-1994;
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                                                                                                                                                                                                                                                                                                                 The present invention relates to a method of modulating apoptosis of a cell. The method comprises administrating to the cell an agent, comprising a BHI domain or BH2 domain, capable of modulating formation or at least one complex selected from bcl-2:bcl-2 complexes, bcl-12:bcl-2xL:bcl-XL:complexes, bcl-2 associated X protein (Bax):Bax complexes, bcl-2:Bax complexes or bcl-XL:Bax complexes. Modulating apoptosis is especially useful in cancer therapy, and treating autoimmunity, immunodeficiency diseases (e.g. AIDS), reperfusion injury, myocardial infarction, stroke, traumatic brain injury, neurodegenerative diseases, aging, ischaemia, toxemia, infection, hepatitis, transplant rejection, and lymphopyroliferative diseases. The present sequence is human Bax, which was used in a sequence alignment in the present invention, with murine was used in a sequence alignment in the present invention, with murine is a complexed to the complex of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes of the complexes
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27; Conser
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                                                               protein; 192
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CUL-1; cullin; CDC53; p27; cyc1Bad; Bcl-2; tumour; cytostatic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Modulating polypeptide levels in a cell, diagnosing and treating tumor, involves altering levels of proteins such as S-phase kinase associated proteins 1, 2 and cullin/CDC53 proteins -
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                                                                                                                                                                                                                     Human; Bax; apoptosis modulator; BCL-2.
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14-OCT-1997;
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27; Conserv
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Matches 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention describes a method for identifying modulators of apoptosis which involves contacting a compound of interest with a lipid bilayer comprising a K+ or Cl- selective channel. This channel is a member of the BCL-2 family. Apoptosis modulators are also provided, including Bcl-2deltaTM and BaxdeltaTM.
The present invention describes a method for screening for an apoptosis inhibitor or an apoptosis promoter in which VDAC-liposome, an index substance which can pass VDAC and a sample are incubated and the change in the concentration of the index substance during the incubation is detected to judge the presence of apoptosis inhibition or apoptosis promotion. The apoptosis inhibitor or the apoptosis promoter can be used as a drug and a diagnostic agent for various diseases caused by
                                                                                                                                                   Screening of an apoptosis inhibitor or promoter which can be used as drug and a diagnostic agent for various diseases caused by apoptosis inhibition or apoptosis promotion -
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N-PSDB; AAC90811.
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                                                                                                                    Claim 13; Page 17; 22pp; Japanese.
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GENERAL INFORMATION:
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Best Local Similarity
Matches 27; Conserv
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TELEPAX: 202-942-8484
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/908,597A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/08/440,391
FILING DATE: 12-MAY-1995
ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION NUMBER: 32,073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH TITLE OF INVENTION: MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: CHITTENDEN, Thomas D.; and APPLICANT: LUTZ, Robert J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STATE: D.C. 2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE: CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 QDASTKKLSECLKRIGDELDSNMELQR 29
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                         NUMBER OF SEQUENCES: 41
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                   APPLICANT: CHITTENDEN, Thomas D.; and LUTZ, Robert J.
TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS WHICH MODULATE APOPTOSIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Washington
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                                                                                                       ADDRESSEE: Hale and Dorr
STREET: 1455 Pennsylvania Avenue, N.W.
CITY: Washington
STATE: D.C.
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1455 Pennsylvania Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 135; DB 2; ilarity 100.0%; Pred. No. 1.5e-13; Conservative 0; Mismatches 0;
                                                                                        20004
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TOPOLOGY: linear

MOLECULE TYPE: peptide
SEQUENCE DESCRIPTION: SEQ ID NO: 13:
US-09-236-385A-13
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PCT-US96-06122-13
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PCT-US96-06122-13
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GENERAL INFORMATION:
APPLICANT: IMMUNO
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Best Local Similarity
Matches 27; Conserv
                                                                                                                  TELEPHONE: 202-942-84
TELEFAX: 202-942-8484
INFORMATION FOR SEQ ID NO:
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                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: WIXON, HENRY N.
REGISTRATION UNMBER: 32,073
REFERENCE/DOCKET NUMBER: 104322.147PCT
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: NOVEL PEPTIDES AND COMPOSITIONS TITLE OF INVENTION: WHICH MODULATE APOPTOSIS NUMBER OF SEQUENCES: 34
                                                                                               SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                         PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/440,391
FILING DATE: 12-MAY-1995
CLASSIFICATION:
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS
                      MOLECULE TYPE:
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STATE: D.C
STATE: 20004
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CITY: Washington
                                         TOPOLOGY:
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                                                                            LENGTH:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/236,385A
FILING DATE: 25-Jan-1999
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-942-8400
TELEFAX: 202-942-8484
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                                                     amino acid
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1455 Pennsylvania Avenue, N.W.
                                                                            34 amino acids
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                                                                                                                                                             202-942-8400
                    peptide
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Query Match
Best Local Similarity
Watches 27; Conserve
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                                                                                                                      Sequence 9, Application US/08112208C Patent No. 5691179
GENERAL INFORMATION:
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
TYPE: amino acid
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/112,208C
FILING DATE: 26-AUG-1993
CLASSIFICATION: 536
CLASSIFICATION: 536
CLASSIFICATION: 536
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
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NAME: Smith, William M
REGISTRATION NUMBER: 30,223
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MEDIUM TYPE: Floppy
                                                        APPLICANT: KORSMEYER, Stanley J.
TITLE OF INVENTION: CELL DEATH REGULATORS
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
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                                                                                                                                                                                                                                    STREET: 379 Lytton Avenue CITY: Palo Alto STATE: California
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nes 27; Conserv
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             STREET: 379 Lytton Avenue CITY: Palo Alto
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                                            ADDRESSEE:
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California
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                                            Townsend and Townsend Khourie and Crew
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                                                                                                                                                                                                                                                                                                                   Score 135; DB 1
Pred. No. 1e-12;
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                                                                                                                                                                                                                                                                                                                                   DB 1;
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US-08-248-819A-2
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Best Local Similarity 100.0%; Pred. No. 1e-12;
Matches 27; Conservative 0; Mismatches
                                                                                                                                                                                                                                                MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ver:
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/248,819A
FILING DATE: 25-WAY-1994
CLASSIFICATION: 435
PRIOR APPLICATION: 435
PRIOR APPLICATION DATA:
ADDITORMANDED: US/08/213-200
                                                                             APPLICATION NUMBER: US 08/112
FILING DATE: 26-AUG-1993
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30.223
REFERENCE/DOCKET NUMBER: 1572
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
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INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                         TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: US
ZIP: 94301
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d.
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
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CORRESPONDENCE ADDRESS:
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NAME: Smith, William M
REGISTRATION NUMBER: 30,223
                    SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       52 QDASTKKLSECLKRIGDELDSNMELQR 78
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STRANDEDNESS: sir
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192 amino acids
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VENTION: CELL DEATH REGULATORS
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linear
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RESULT 9
US-08-607-269-25
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; TOPOLOGY: Linear
; MOLECULE TYPE: protein
US-08-248-819A-9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-08-248-819A-2
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Patent No. 5702897
GENERAL INFORMATION:
                 Query Match
Best Local :
                                                                                                                                                                                              Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: US/08/248,819A FILING DATE: 25-NAY-1994 CLASSIFICATION: 435 PRIOR APPLICATION DATA: APPLICATION NUMBER: US 08/112,208 FILING DATE: 26-AUG-1993 ATTORNEY/AGRAT INFORMATION: NAME: Smith, William M. REGISTRATION NUMBER: 30,23 REFERENCE/DOCKET NUMBER: 15726A-000 TELECOMMUNICATION INFORMATION: TELECHONE: (415) 326-2400 TELECHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: (415) 326-2422
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: Townsend and Townsend Khourie and Crew
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION: CELL DEATH REGULATORS NUMBER OF SEQUENCES: 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                         52 QDASTKKLSECLKRIGDELDSNMELQR 78
                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 379 Lytton Avenue
CITY: Palo Alto
STATE: California
COUNTRY: US
                                                                                                                                          1 QDASTKKLSECLKRIGDELDSNMELQR 27
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27; Conserv
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                                       Application US/08607269
                                                                                                                                                                                                                                                                                                                                                            192 amino acids
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100.0%; Pred. No. 1e+12;
Pative 0; Mismatches
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RESULT 10
US-08-471-058-13
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Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
APPLICANT: Kiefer, Michael C.
APPLICANT: Barr, Philip J.
TITLE OF INVENTION: NOVEL APOPTOSIS MODULATING
TITLE OF INVENTION: PROTEINS, DNA ENCODING THE PROTEINS AND METHODS OF USE
TITLE OF INVENTION: THEREOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/226,8:
APPLICATION NUMBER: US 08/226,8:
FILING DATE: 13-APR-1994
ATTONNEY/AGENT INFORMATION:
NAME: Campbell, Cathryn A.
REGISTRATION NUMBER: 31,815
REFERENCE/DOCKET NUMBER: P-LJ 99
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: (619) 535-8949
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: FASTSEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/471,058
                                                                                                         COUNTRY: USA
ZIP: 94304-1018
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORRISON & FOERSTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC COMPALIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTTWARE: PATENTIAN PC-BOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/607,269
FILING DATE:
CLASSIFICATION: 435
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MEDIUM TYPE: Floppy disk
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ADDRESSEE: Campbell and Flores
STREET: 4370 La Jolla Village Drive, Suite 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Reed, John C.
APPLICANT: Sato, Takaaki
TITLE OF INVENTION: Interaction of Proteins Involved in
TITLE OF INVENTION: Cell Death Pathway
NUMBER OF SEQUENCES: 29
                                                                                                                                                                                                                  STREET: 755 PAGE CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52 QDASTKKLSECLKRIGDELDSNMELQR 78
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CITY: San Diego
STATE: Californ:
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amino acid
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PRIOR APPLICATION DATA:

CLASSIFICATION:

FILING DATE:

06-JUN-1995

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US-08-337-646A-2
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Best Local Similarity
Matches 27; Conserv
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INFORMATION FOR SEQ ID NO: 13
SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/248,819
FILING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/112,208
FILING DATE: 26-AUG-1993
ATTORNEY,AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
ATTORNEY,AGENT NUMBER: 30,223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                   TELEFAX: (415) 326-2422 INFORMATION FOR SEQ ID NO: 2:
                                                                   REFERENCE/DOCKET NUMBER: 15
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM CC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Lehnhardt, Susan K
REGISTRATION NUMBER: 33,943
REFERENCE/DOCKET NUMBER: 23647-20007.12
TELECOMMUNICATION INFORMATION:
TELEPHONE: 415-813-5600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 08/160,067 FILING DATE: 30-NOV-1993 ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                   SEQUENCE CHARACTERISTICS:
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                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CITY: Palo Alto
STATE: California
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TELEPHONE: 415-494-0792
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NUENTION: CELL DEATH REGULATORS
NEODIENCES: 78
192 amino acids
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ilarity 100.0%; Pred. No. 1e-12;
Conservative 0; Mismatches
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; TYPE: amino acid; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-337-646A-2
                                                                                                                                              ; TOPOLOGY: 1; MOLECULE TYPE: US-08-337-646A-9
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US-08-337-646A-9
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                                                                Matches
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                                                                                            Query Match
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Best Local Similarity
                                                                                                                                                                                                                                                         NAME: SMILL,
NAME: SMILL,
REGISTRATION NUMBER: 15/4.
RECERENCE/DOCKET NUMBER: 15/4.
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 326-2400
TELEPHONE: (415) 326-2422
                                                                                                                                                                                                                                                              TELEPHONE: (415) 326-24: TELEFAX: (415) 326-24: INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US 08/248,819
ETIJING DATE: 25-MAY-1994
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/112,208
ETIJING DATE: 26-AUG-1993
ATTORNEY/AGENT INFORMATION:
NAME: Smith, William M
REGISTRATION NUMBER: 30,223
REGERENCE (NOVER WILLERS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/337,646A FILING DATE: 10-NOV-1994 CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STREET: 379 Lytton Avenue CITY: Palo Alto STATE: California
                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: sir
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52 QDASTKKLSECLKRIGDELDSNMELQR 78
                                                                              Local
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52
                                                                                                                                                                                                                                LENGTH:
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                              1 QDASTKKLSECLKRIGDELDSNMELQR 27
QDASTKKLSECLKRIGDELDSNMELQR 78
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                                                                l Similarity
27; Conserv
                                                                                                                                                                                                                              192 amino acids
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KORSMEYER, Stanley J.
VENTION: CELL DEATH REGULATORS
POHENCES: 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                Conservative
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                                                                                                                                                              protein
                                                                                                                                                                                           single
                                                          100.0%; Sc
100.0%; Pr
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                                                                              Score 135; DB 2
Pred. No. 1e-12;
                                                                Mismatches
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RESULT 13 US-08-856-531-2

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; OTHER INFORMATION: /note= "Human BAX polypeptide"
US-08-856-531-2
                                                                                                                                                                                                                                                                                                                                   US-08-856-531-9
                                                                                                                                                                                                                                                                                                 Sequence 9, Application US/08856531 Patent No. 5942490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2,
Patent No.
GENERAL IN
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Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
ANAME: HOLLAND, Donald R.
REGISTRATION NUMBER: 35,197
REFERENCE/DOCKET NUMBER: 9761
TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
TELEPHONE: 314-727-6092
TELEFAX: 314-727-6092
                                                                                                                                                                                                                                                                               GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: 314-727-6092 INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                  APPLICANT: KORSMEYER, Stanley J.
APPLICANT: KORSMEYER, STANLEY J.
TITLE OF INVENTION: CELL DEATH REGULATORS
UNMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSEE: Howell & Haferkamp, L.C.
STREET: 7733 FORSYTH Blvd., Suite 1400
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IECOMPATED:
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ZIP: 63105
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS:
ADDRESSEE: Howell & Haferkamp, L.C.
STREET: 7733 Forsyth Blvd., Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
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ZIP: 63105
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                                                                                                        COUNTRY: U
                                                                                                                                          CITY: St.
STATE: MO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                      NAME/KEY: Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: US/08/856,531
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5. 5942490
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VENTION: CELL DEATH REGULATORS
                                                                                                                                                           Louis
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ELL DEATH REGULATORS
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Pred. No. 1e-12;
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; NAME/KEY: Protein
; LOCATION: 1..192
; OTHER INFORMATION:
US-08-856-531-9
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US-08-856-034-2
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Patent No. 5955595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                       TELEFAX: 314-727-buyz
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                        FILING DATE:
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, DONALD R.
REGISTRATION NUMBER: 35,11
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEPHONE: 314-727-516
TELEFAX: 314-727-6092
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/856,034
                                                                                                                                                     TELECOMMUNICATION INFORMATION:
TELEPHONE: 314-727-5188
TELEFAX: 314-727-6092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: CE
NUMBER OF SEQUENCES: 3
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: HOLLAND, Donald R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 192 amino acid
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                              MOLECULE TYPE:
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CITY: St.
STATE: MO
                                                 TOPOLOGY:
                                                                TYPE: amino acid
STRANDEDNESS: sir
                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY: U
ZIP: 63105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: Howell & Haferkamp, L.C. STREET: 7733 Forsyth Blvd., Suite 1400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52 QDASTKKLSECLKRIGDELDSNMELQR 78
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NAME/KEY:
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STRANDEDNESS: sir
TOPOLOGY: linear
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REFERENCE/DOCKET NUMBER:
                                                                                                  ENGTH:
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FORTION: CELL DEATH REGULATORS
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                                                                single
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100.0%; Pred. No. 1e-12;
Live 0; Mismatches
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Result
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Maximum Match 100%
Listing first 45 summaries
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Maximum DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Title:
Perfect score:
                                                                                                                                                                                                                                                                                                                                                                     Database :
                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OM protein -
Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                         Score
                                                                                                            135
135
125
1232
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                                                                                                                                                                                                                                                                                                                                                                                                                     length: 2000000000
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Match
        BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-09-544-664-6
135
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                                                                                                                                                                                                                                                                                                                                                                     PIR_71:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                               283138 seqs, 96089334 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
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pir2:*
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740
1957
1957
163
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229
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133
485
575
471
480
845
614
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718
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                                                                                 F82614
A45627
A59294
S43240
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S64310
A37244
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A47538
B47538
B47538
D47538
I53295
F64165
               JW0060
JW0061
E71098
D72370
H84115
S08981
A47476
E96740
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G86324
A90506
T51488
T19923
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                                       hypothetical prote
hypothetical prote
conserved hypothet
myosin heavy chain
skeletal myosin -
troponin C - commo
troponin C - commo
troponin C - Flori
probable aroM prot
conserved hypothet
ribokinase rbsK [i
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BCL2 homolog MCL1
hypothetical prote
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probable ABC
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                                                                                                                                                                                              hypothetical prote
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                                                                                                                                                                                      hypothetical prote
        prote
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C;Superfamily: bc1 transforming protein
C;Keywords: transmembrane protein

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ctivation.

RESULT 1  JC7255  Bax-delta protein - human C; Species; Homo sapiens (man) C; Date: 09-Jun-2000 #sequence_revision 09-Jun-2000 #text_change 17-Nov-2000 C; Accession: JC7255 R; Schmitt, E; Paquet, C; Beauchemin, M; Dever-Bertrand, J; Bertrand, R. Biochem. Biophys. Res. Commun. 270, 968-879, 2000 A;Title: Characterization of Bax-delta, a cell death-inducing isoform of Ba A; Reference number: JC7255 A; Accession: JC7255 A; Acces	ALIGNMENTS	30 47 34.8 591 2 S43428 31 47 34.8 862 1 FADOAA 32 46.5 34.4 1151 2 T13734 34 46.5 34.4 1736 2 F861374 35 46.5 34.1 1736 2 F86178 36 46 34.1 186 2 T21243 37 46 34.1 186 2 T21243 39 46 34.1 185 2 H69230 39 46 34.1 802 2 M87754 40 46 34.1 1033 2 T38131 41 45 34.1 1094 2 S49313 42 45 34.1 1094 2 S49313 43 45.5 33.7 353 2 T90442 44 45.5 33.7 353 2 T90442 45 45.5 33.7 3224 1 S58884
change 17-Nov-2000 , J.; Bertrand, R. cing isoform of Bax.		omega-crystallin - alpha-actinin - sl groovin gene prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote protein C45E11.11 hypothetical prote protein kinase - s hypothetical prote hypothetical prote protein kinase - s hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote hypothetical prote

C;Date: volum, 7-18 C;Accession: A47538 R;Oltvai, Z.N.; Milliman, C.L.; Korsmeyer, S.J. Cell 74, 609-619, 1993 A;Title: Bcl-2 heterodimerizes in vivo with a conserved A:Reference number: A47538; MUID:93364978 RESULT 2
A47538
bcl-2-associated protein x, alpha splice form - human
N;Alternate names: BAX; programmed cell death membrane protein x alpha
C;Species: Homo sapiens (man)
C;Date: 03-May-1994 \*sequence\_revision 03-May-1994 \*text\_change 17-Nov-2000 A;Cross-references: GDB:228082; OMIM:600040 A;Map position: 19413.3-19413.4 C;Superfamily: bcl transforming protein C;Keywords: alternative splicing; blocked amino end; heterodimer; homodimer; transmem A; Note: the C; Genetics: 멍 δð Query Match Best Local Similarity ""+rhes 27; Conserve A; Gene: GDB: BAX A; Cross-references: A; Molecule type: mRNA A; Residues: 1-192 <OLT> references: GB:L22473; NID:g388165; the amino end of the mature protein Conservative 100.0%; 0; Score 135; DB 2 Pred. No. 2e-11; Mismatches PIDN:AAA03619.1; PID:g388166 is blocked DB 2; 0 Length 179; Indels homolog, Bax, that accelerate 0 0

F;172-191/Domain:

transmembrane #status predicted <TMM1>

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bcl-2-associated protein x, beta splice form - human N;Alternate names: BAX; programmed cell death membrane protein x beta C;Species: Homo sapiens (man) C;Date: 03-May-1994 #sequence_revision 03-May-1994 #text_change 17-Nov-2000 C;Accession: B47538 R;Oltvai, Z,N.; Miliman, C.L.; Korsmeyer, S.J.
                                                                                                                                                                                                                                                                                                             C;Accession: D47538
R;Oltvai, Z.N.; Milliman, C.L.; Korsmeyer, S.J. cell 74, 609-619, 1993
A;Title: Bcl-2 heterodimerizes in vivo with a c A;Reference number: A47538; MUID:93364978
A;Accession: D47538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GDB:228082; OMIM:600040 A;Map position: 19q13.3-19q13.4 C;Superfamily: bcl transforming protein C;Keywords: alternative splicing; blocked amino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molocule type: mRNA
A;Residues: 1-218 <OLT>
A;Residues: 1-218 <OLT>
A;Cross-references: GB:L22474; NID:g388167; PIDN:AAA03620.1; PID:g388168
A;Note: the amino end of the mature protein is blocked
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cell 74, 609-619, 1993
A;Tltle: Bcl-2 heterodimerizes in vivo with a conserved
A;Reference number: A47538; MUID:93364978
A;Accession: B47538
                                                           ρy
                                                                                                                                                                                                                                                                                                                                                                                                                       bcl-2-associated protein x - mouse
N;Alternate names: BAX; programmed cell death membrane protein x
C;Species; Mus musculus (house mouse)
C;Date: 03-May-1994 #sequence_revision 03-May-1994 #text_change 17-Nov-2000
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                          문
                                                                                                                                                                             A:Gene: bax
C:Superfamily: bcl transforming protein
                                                                                                                                                                                                                                          A; Cross-references: GB:L22472
                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-192 <OLT>
                                                                                                                                                                                                                                                                                             A; Status: preliminary
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Best Local
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Best Local
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Best Local Similarity
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                        52
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                                                              QDASTKKLSECLKRIGDELDSNMELQR 27
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                                                                                                                  Similarity
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96.3%;
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                                                                                               Score 132; DB 2;
Pred. No. 5.7e-11;
1; Mismatches 0
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Pred. No. 2.5e-11;
); Mismatches 0;
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Pred. No. 2.2e-11
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                                                                                                                                 2; Length 192;
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                                             R;Theologis,
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C;Accession: F64165
C;Accession: F64165
C;Accession: F64165
R;Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage R;Fleischmann, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Weidman ; Gcayne, J.D.; Rerandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghagen, N.S.M., D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Fuhrmann, J.L.; Geoghagen, N.S.M.; Science 269, 496-512, 1995
Science 269, 496-512, 1995
A;Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Vente A;Title: Whole-genome random sequencing and assembly of Haemophilus influenzae Rd. A;Reference number: A64000; MUID:95350630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  bcll-2-associated protein x - rat (fragment)
bcll-2-associated protein x - rat (fragment)
W.Alternate names: BAX; programmed cell death membrane protein x
C;Species: Rattus norvegicus (Norway rat)
C;Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 03-Nov-2000
C;Accession: 153295
R;Tilly, J.L.; Tilly, K.I.; Kenton, M.L.; Johnson, A.L.
Endocrinology 136, 232-241, 1995
A.7itle: Expression of members of the bcl-2 gene family in the immature rat onstitutive bcl-2 and bcl-xlong messenger ribonucleic acid levels.
A;Reference number: 153295; MUID:95129487
A;Accession: 153295; MUID:95129487
A;Accession: 153295
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-133 <RES>
A;Cress-AFFRACES: FMRI.1172008: NID:0475869 DIDN:AAA75200.1; PID:04975870
                                                      hypothetical protein F20D21.19 [imported] - Arabidopsis thaliana C:Species: Arabidopsis thaliana (mouse-ear cress) C:Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Mar-2001 C:Accession: D96585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein HI1064 - Haemophilus influenzae (strain Rd KW20)
C;Species: Haemophilus influenzae
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 08-Oct-1999
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C;Superfamily: bcl transforming
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Molecule type: DNA
A; Residues: 1-485 <TIGR>
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Best Local Similarity
Matches 10; Conserv
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Best Local
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25; Conserv
A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; C.
                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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Pred. No.
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Pred. No. 1e-10;
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                                    S.; White,
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Conway, A.R.; Creasy, T.H.;

Dewar,

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A; ACCESSION. A. ANDIS A; Rolecule type: DNA A; Rolecule type: DNA A; Residues: 1-239, 'R', 241-471 <ANDIS A; Residues: 1-239, 'R', 241-471 <ANDIS A; Cross-references: EMBL: X52600; NID: 94745; PIDN: CAA36833.1; A; Cross-imental source: Strain sigma 1278b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Residues: 1-471 <RIE>
A;Cross-references: EMBL:272804; NID:g1322986; PIDN:CAA97002.1; PID:g1322987; MIPS:YGR01
A;Experimental source: strain S288C
R;Andre, B.; Jauniaux, J.C.
Nucleic Acids Res. 18, 3049, 1990
A;Title: Nucleotide sequence of the yeast UGA1 gene encoding GABA transaminase.
A;Reference number: S26708; MUID:90272415
A;Accession: S26708
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Nature 408, 816-820, 2000

A; Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.;
C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Ma
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; T.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Davis, R.W.

Ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A; Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A; Reference number: A86141; MUID:21016719

A; Accession: D96585
                                                                                                                                                                                                                                                                                                                                                                A;Map position: 7R
C;Superfamily: 4-aminobutyrate transaminase
C;Keywords: aminotransferase; pyridoxal phosphate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              4-aminobutyrate transaminase (EC 2.6.1.19) - yeast (Saccharomyces cere*isiae)
N;Alternate names: 4-aminobutyrate aminotransferase; gamma-aminobutyrate transaminase;
C;Species: Saccharomyces cerevisiae
C;Date: 17-May-1996 #sequence_revision 17-May-1996 #text_change 20-Jun-2000
C;Accession: S64310; S26708
R;Rieger, M.; Mueller-Nuer, S.; Brueckner, M.; Schaefer, M.
submitted to the Protein Sequence Database, May 1996
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A; Map position: 1
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A; Accession: S64310
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A; Residues: 1-575 <STO>
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A;Cross-references: SGD:S0003251; MIPS:YGR019w
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nuclear autoantigen Sp-100 - human
C; Species: Homo sapiens (man)
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Best Local Similarity
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Best Local Similarity
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Pred. No. 2
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Pred. No. 23;
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Marziali,
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C;Date: 30-Dec-1991 *sequence_revision 30-Dec-1991 *text_change 05-Nov-1999 C;Accession: A37244
R;Szostecki, C; Guldner, H.H.; Netter, H.J.; Will, H.
J. Immunol: 145, 4338-4347, 1990
A;Title: Isolation and characterization of cDNA encoding a human nuclear ant A;Reference number: A37244; MUID:91079525
A;Accession: A37244
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-480 <SZO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A:Experimental source: strain Nichols C;Genetics:
A;Gene: TP0488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R.Fraser, C.M.: Norris, S.J.: Weinstock, G.M.; White, O.: Sutton, G.G.: Dodson, Frson, J.: Khalak, H.: Richardson, D.: Howell, J.K.: Chidambaram, M.: Utterback, 7 they, L.: Weidman, J.: Smith, H.O.: Venter, J.C. Science 281, 375-388, 1998
A.Title: Complete genome sequence of Treponema pallidum, the syphilis spirochete. A: Reference number: A71250; MUID:98332770
A: Reference number: A71250; MUID:98332770
                                                                                                                                 C;Accession: $43427

C;Accession: $43427

C;Accession: $43427

C;Accession: $43427

C;Accession: $43427

C;Accession: $43427

C;Accession: $43427

C;Accession: $43427
A;Cross-references: EMBL:L10112; NID:g159851; PID:g159852 A;Note: the authors did not translate the codon for residue C;Superfamily: intermediate filament protein Av71
                                                                 A; Status: preliminary
A; Molecule type: mRNA
A; Residues: 1-614 < TOM>
                                                                                                                                                                                                                                                                    intermediate filament protein - Sloane's squid
C;Species: Ommastrephes sloanei (Sloane's squid)
C;Date: 07-Sep-1994 #sequence_revision 26-May-1995 #text_change 26-Aug-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Status: preliminary; nucleic acid sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            probable methyl-accepting chemotaxis protein (mcp2-1) - syphilis spirochete C;Species: Treponema pallidum subsp. pallidum (syphilis spirochete) C;Date: 24-Jul-1998 #sequence_revision 24-Jul-1998 #text_change 05-Nov-1999 C;Date: H71317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GB:M60618; NID:g178688; PIDN:AAA35537.1; PID:g178689
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mes 11; Conserv
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52.48;
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Pred. No.
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37.0%;

Score

50;

DB 2;

Length 614;

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A:Reference number: A99139
A:Accession: A90506
A:Status: preliminary
A:Molecule type: DNA
A:Residues: 1-669 <KUR>
A:Cross-references: GB:AE006
C:Genetics:
A:Gene: SSO3207
                                                                                                                                                                                                                                                                                                                                                                              R;She, Q.; Singh, R.K.; Confalonieri, F.; Zivanovic, Y.; Allard, G.; Awayez, M.J.; Chan-Jong, I.; Jeffries, A.C.; Kozera, C.J.; Medina, N.; Peng, X.; Thi-Ngoc, H.P.; Redder, I arrett, R.A.; Ragan, M.A.; Sensen, C.W.; Van der Oost, J. submitted to GenBank, April 2001
A;Description: Sulfolobus solfataricus complete genome.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C:Accession: G86324
R;Theologis, A; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Devar, K.; ansen, N.F.; Hughes, B.; Hultar, L.
Rature 408, 816-820, 2000
A:Authbors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C. C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Malti, R.; Marziali, Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.; Southwick, A.M.; Sun, H.; Tallon, A.; Muthors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome l of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719
A;Reference number: A86141; MUID:21016719
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ser/thr protein kinase, probable [imported] - Sulfolobus solfataricus C;Species: Sulfolobus solfataricus C;Date: 24-May-2001 #sequence_revision 24-May-2001 #text_change 24-May-2001
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A90506
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A;Map position: 1
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A; Residues: 1-311 <STO>
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Best Local Similarity 50.8
Matches 7; Conservative
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175
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hes 8; Conservative
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                                      8 LSECLKRIGDELDS 21
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VAQCMERIGDELEA 188
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42.1%;
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                                                                                  Score 49; DB Pred. No. 69; 7; Mismatches
                                                                                                                                                                                                                                               NID:g13816645; PIDN:AAK43304.1; GSPDB:GN00155
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7; M1smatches
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Pred. No.
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Search completed: September 20, Job time: 476 sec

2002,

10:39:04

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hypothetical protein T21H19_100 - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 18-Aug-2000 #sequence_revision 18-Aug-2000 #text_change 18-Aug-2000 C;Accession: T51488 R;Sato, S; Nakamura, Y.; Kanako m """"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Molecule type; DNA
A;Residues: 1-718 <SAT>
A;Cross-references: EMB1:AL391148
A;Experimental source: cultivar Columbia; BAC clone T21H19
C;Genetics:
                                                                                                                                                                                                                                                                                                                                R:Cottage, A. submitted to the EMBL Data Library, February 1996 A:Reference number: 219197
                                                                                                                                                                                                                                                                                                                                                                                                hypothetical protein C44C10.2 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #te C;Accession: T19923
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T19923
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A; Introns: 271/3;
A; Note: T21H19_100
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A;Accession: T51488
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A;Gene: CESP:C44C10.2
                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-732 <WIL>
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                                                                                                                                                             A; Introns: 54/3; 102/3;
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                                                                                                                                                                                                                                                                                                         A; Status: preliminary; translated from GB/EMBL/DDBJ
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Best Local S
Matches 10
                                                                  Query Match 36.3%;
Best Local Similarity 42.3%;
Matches 11; Conservative
154 DATKKELSETKKQLETERQKSIESQR 179
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                                  2 DASTKKLSECLKRIGDELDSNMELQR 27
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                                                                                                                                                                                                                                                                                                                                                                                                                    #sequence_revision 15-Oct-1999 #text_change
                                                                                                                                                             119/3; 388/1; 427/3; 490/3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; Kaneko, T.; Kato, T.; Asamizu, E.; Kotani, H.; Tabata, Sequence Database, August 2000
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43
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Pred. No.
                                                                                       Score 49;
Pred. No.
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74;
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Maximum DB seq length: 2000000000
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SEQUENCE
-I-FUNCTION: ACCELERATES PROGRAMED CELL DEATH BY BINDING TO, AND ANTAGONIZING THE APOPTOSIS REPRESSOR BCL-2 OR ITS ADENOVIBUS HOMOLOG E18 19K PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C, ACTIVATION OF CASPASE-3, AND THEREBY APOPTOSIS.
-I-SUBUNIT: FORMS HOMODIMERS AND HETERODIMERS TOGETHER WITH BCL-2, E1B 19K PROTEIN, BCL-1(L), MCL-1 AND A1.
-I-ALTERNATIVE PRODUCTS: THE MEMBRANE ISOFORM ALPHA AND THE THREE CYTOPLASMIC ISOFORMS, BETA, GAMMA AND DELTA ARE GENERATED BY ALTERNATIVE SPLICING.
-I-TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES.
-I-DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD AND BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
                                                                                                                                                                                             Blood
                                                                                                                                                                                                                                                                                                            EMBO
                                                                                                                                                                                                                                                                                                                     MUTAGENESIS, AND FUNCTION OF BH3 DOMAIN.
MEDLINE-96091131; PubMed-8521816;
Chittenden T., Filenington C., Houghton A.B., Ebb R
Elangovan B., Chinnadurai G., Lutz R.J.;
"A conserved domain in Bak, distinct from BH1 and
death and protein binding functions.";
EMBO J. 14:5589-5596(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-93364978; PubMed-8358790; Oltval Z.N., Milliman C.L., Korsmeyer S.J.; "Bc1-2 heterodimerizes in vivo with a conserved homolog, Bax, accelerates programmed cell death."; Cell 74:609-619(1993).
                                                                                                                                                                                                                                                 VARIANT T-CELL ACUTE LYMPHOBLASTIC LEUKEMIA / MEDLINE-98200607; PubMed-9531611; Meilerink J.P.P., Mensink E.J.B.M., Wang K., Sloetjes A.W., de Witte T., Waksman G., Korsr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Apoptosis;
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Mammalia; Eutheria;
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Pred. No. 1.8e-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6B4D5BABF1D5F87E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         update)
                                                                                                                                                                                                                                                   Korsmeyer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  À
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1;
                                                                                                                                                                                                                                                                                            ARG-67
                                                                                                                                                                                                                                                   meyer S.J.;
                                                                                                                                                                                                                                                                                                                                                                              Ebb R.G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 192;
                                                                                                                                                                                                                                                                                                                                                    BH2, mediates
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                Gallo
                                                                                                                                                                                                                                     mutations
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0;
                                                                                                                                                                                                                                                                                                                                                                              G.J.,
                                                                                                                                                                                                                                                                                                                                                    cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                     of
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                 BAXB HUMAN STANDARD,
Q07814;
Q07814;
01-FEB-1995 (Rel. 31, Created)
01-FEB-1995 (Rel. 31, Last sequence update)
16-CCT-2001 (Rel. 40, Last annotation update)
16-CCT-2001 (Rel. 40, Cytoplasmic isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
TRANSMEM
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                   Oltvai Z.N., Milliman C.L., Korsmeyer "Bcl-2 heterodimerizes in vivo with a accelerates programmed cell death."; Cell 74:609-619(1993).
                                                                                                                                                                                                                                                                                                              HUMAN
                                                                                                                                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Apoptosis;
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE; PS50062; BCL2_FAMILY;
PROSITE; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR002475; BCL2_family.
InterPro; IPR000712; BCL_2.
Pfam; PF00452; BCL-2; 1.
SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSSP; Q07817;
MIM; 600040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                        MEDLINE-93364978; PubMed-8358790;
                                                                                                                       TISSUE-B-cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; L22473; AAA03619.1; .. PIR; A47538; A47538.
                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                     Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                  52
                                                                                                                                                                                                                                                                                                                                                                                          -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

DISEASE: DEFECTS IN BAX ARE FOUND IN SOME PATIENTS WITH ACCUTE LYMPHOBLASTIC LEUKEMIA.

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).

SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
FUNCTION: ACCELERATES PROGRAMED CELL DEATH ANTAGONIZING THE APOPTOSIS REPRESSOR BCL-2 HOMOLOG E1B 19K PROTEIN.
SUBUNIT: FORMS HOMODIMERS AND HETERODIMERS
                                                                                                                                                                                                                                                                                                                                                                             QDASTKKLSECLKRIGDELDSNMELQR 27
                                                                                                                                                                                                                                                                                                                                                                  QDASTKKLSECLKRIGDELDSNMELQR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q07817; 1MAZ
                                                                                                                                                                                                                                                                                                                                                                                                                    27;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;; Transmembrane; Alternative s
59 73 BH3.
98 118 BH1.
150 165 BH2.
172 192 POTENTIAL.
67 67 G -> R (IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      192
                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA,
                                                                                                                                                                          Chordata;
Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      21184
                                                                                                                                                                                                                                                                                                                                                                                                                                 100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                               .08
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                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           POTENTIAL
G -> R (II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /FTId=VAR_007809.
6C0CDB0A7DEE4994
                                                                                                                                                                                                                                                                                                                                                                                                                   Score 135; DB 1;
Pred. No. 1.8e-11;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LEUKEMIA
                                                                                                                                                                          Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (IN T-CELL
                                                                              S.J.;
conserved
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             splicing;
                                                                                                                                                                                                                                 beta
  TOGETHER
                              OR
VBQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACUTE LYMPHOBLASTIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disease mutation.
                                                                                homolog,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Length
                            BINDING TO, ANIITS ADENOVIRUS
                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                 192;
  WITH BCL-2
                                                                                 вах,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           T-CELL
                                                                                                                                                                                                                                                                                                                                                                                                                     0,
                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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RESULT
BAXA_M
  ACC CC C RT T
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                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
Matches 27
                                                                                                                                                                                                                                                                                                                                                                            PROSITE; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS0162; BCL2-FAMILY; 1.
Apoptosis; Alternative splicing, DOMAIN
59
73
BH3.
DOMAIN
118
118
nut
                                                                                                                                         Q07813;
Q07813;
Q01-FEB-1995 (Rel. 31, Last sequence update)
Q1-FEB-1995 (Rel. 31, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
The regulator BAX, membrane isoform alpha.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR002475; BCL2_family.
InterPro; IPR000712; Bcl_2.
Pfam; PF00452; Bcl_2; 1.
SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            <del>: :</del>
          STRAIN-C57BL/6 X DBA/2;
STRAIN-C57BL/6 X DBA/2;
MEDLINE-93364978; PubMed-8358790;
Oltvai Z.N., Milliman C.L., Korsmeyer
"Bc1-2 heterodimerizes in vivo with a
accelerates programmed cell death.";
cell 74:609-619(1993).
                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleosto
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae;
NCBI_TaxID=10090;
                                                                                                                                                                                                                       MOUSE
                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
                                                                                                                                Mus musculus (Mouse)
                                                                                                                                                                                                            BAXA_MOUSE
                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; L22474; AAA03620.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        <del>-</del>
                                                                                                                                                                                                                                                                 52
                                                                                                                                                                                                                                                                TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES. DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD ANT BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).

SIMILARITY: BELONGS TO THE BCL-2 FAMILY.

SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EIB 19K PROTEIN, BCL-X(L), MCL-1 AND A1.
SUBCELLULAR LOCATION: CYCOPIASMIC.
ALTERNATIVE PRODUCTS: THE MEMBRANE ISOFORM ALPHA AND THE THREE CYTOPLASMIC ISOFORMS, BETA, GAMMA AND DELTA ARE GENERATED BY ALTERNATIVE SPLICING.
  FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          600040;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B47538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q07817; 1MAZ.
                                                                                                                                                                                                                                                                                                           ch 100.0%; Score 135; l Similarity 100.0%; Pred. No. 27; Conservative 0; Mismatche
                                                                                                                                                                                                                                                                                                                                                                  150
218 #
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 B47538.
                                                                                                                                                                                                                                                                                                                                                                  Ā
  ACCELERATES PROGRAMED
                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                  24220 MW;
                                                                                                                                                                                                                                                                                                                                                                          ВН2
                                                                                                                      Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                  F69DCD70F960192F
                                                                                                                                                                                                                                                                                                            Mismatches
 CELL
                                                                                                                                                                                                            192
                                conserved
                                           ß
                                          .J.;
                                                                                                                                                                                                                                                                                                                     2e-11;
                                                                                                                                                                                                           Ã
 DEATH
                                                                                                                                                                                                                                                                                                                                DB
                                                                                                                                                                                                                                                                                                                               1;
                                                                                                                                                                                                                                                                                                            0;
 ВУ
                                                                                                                                                                                                                                                                                                                                                                 CRC64;
                                homolog,
                                                                                                                                                                                                                                                                                                                               Length 218;
 BINDING
                                Bax,
  TO,
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                                                                                                                                                                                                                                                                                                           0;
                                                                                                           Mus
                                that
                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                       er agree
                                                                                                                                                                                                                                                                                                           0;
RESULT
BAXA_RAT
ID BAXA
AC Q636
DT 01-N
DT 16-C
DE APOP
GN BAX.
OS Ratt
OC Edika
OC Manin
OX NCB1
RN [1]
RP SEQU
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                                                                                                                                                                                                                                             Matches
                                                                                                                                                                                                                                                     Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      <del>-</del>
                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                          Apoptosis;
                              Mammalia; Eutheria;
NCBI_TaxID=10116;
                                          Eukaryota; Metazoa;
Mammalia; Eutheria;
SEQUENCE FROM N.A. MEDLINE-96178771;
                                                               Rattus norvegicus (Rat).
                                                                                     Apoptosis
                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                52
                                                                                                                                                                Ş
                                                                                                                                                                                               QDASTKKLSECLRRIGDELDSNMELQR
                                                                                                                                                                                                                                                      Similarity
                                                                                      regulator
                                                                                                                                                                                                                                                                                                192 AA;
                                                                                                                                                                                                                                                                                                            59
98
150
172
                                                                                                                                                                                                                                            Conservative
 PubMed=8600029
                                                                                                                                                                                                                                                                                                           73
118
165
192
                                           Chordata;
Rodentia;
                                                                                                                                                                                                                                                                                                21394 MW;
                                                                                                                                                                                                                                                     97.8%;
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EMBL; L22472; AAA03622.1; -.
HSSP; Q07817; 1MAZ.
MGD; MGI:99702; Bax.
InterPro; IPR002475; BCL2_family.
InterPro; IPR00712; Bcl_2.
Pfam; PF00452; Bcl_2; 1.
SMART; SM00337; BCL; 1.
PROSITE; PS01269; BH1; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS01259; BH3; 1.
                                                                                                                                                    BAXA_RAT STANDARD; PRT; 1
Q63690; Q62995; Q64383;
Q1-NOV-1997 (Rel. 35, Created)
Q1-NOV-1997 (Rel. 35, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the EUROpean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 QDASTKKLSECLKRIGDELDSNMELQR 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPLICING.

TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TIS
DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK
BAX FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INT
WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1 (BH1).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: FORMS HOMODIMERS AND HETERODIMERS TOGETHER WITH BCL-2, EL19 19K PROTEIN, BCL-X(L), MCL-1 AND A1.

SUBCELLULAR LOCATION: Membrane-bound.

ALTERNATIVE PRODUCTS: A 21 kDa MEMBRANE PROTEIN ALDHA AND THE TWO CYTOPLASMIC PROTEINS BETA AND GAMMA ARE GENERATED BY ALTERNATIVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LEADS TO LYMPHOID HYPERPLASIA AND MALE CESSATION OF SPERM PRODUCTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ANTAGONIZING THE APOPTOSIS REPRESSOR BCL-2 OR ITS ADENOVIRUS HOMOLOG E1B 19K PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C. ACTIVATION OF CASPASE-3, AND THEREBY APOPTOSIS. BAX DEFICIENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transmembrane; Alternative splicing
                                                                                                                            BAX, membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 132; DB 1;
Pred. No. 4.5e-11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    POTENTIAL.
porential.
Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                            tion update)
isoform alpha
                                                                                                                                                                                          update)
                                                                                                                                                                                                                                                                                              192
                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STERILITY, BECAUSE OF THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 192;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BAX DEFICIENCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OF TISSUES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BAK, BAD AND INTERACTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
Rattus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
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RX MEDLINE-95129487; PubMed-7828536;
RX MEDLINE-95129487; PubMed-7828536;
RA Tilly J.L., Tilly K.I., Kenton M.L., Johnson A.L.;
RT Texpression of members of the bcl-2 gene family in the immature rat rovary; equine chorionic gonadotropin-mediated inhibition of granulosa recell apoptosis is associated with decreased bax and constitutive bcl-2 and bcl-xiong messenger ribonucleic acid levels.";
RL Endocrinology 138:232-241(1995).
CC HOMOLOG E1B 19X PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C, ACTIVATION OF CASPASE-3, AND THEREBY APOPTOSIS.
CC HOMOLOG E1B 19X PROTEIN. INDUCES THE RELEASE OF CYTOCHROME C, ACTIVATION OF CASPASE-3, AND THEREBY APOPTOSIS.
C SUBUNIT: FORMS HOMODIMERS AND HETERODIMERS TOGETHER WITH BCL-2, C E1B 19X PROTEIN, BCL-X(L), MCL-1 AND A1.
C C E1B 19X PROTEIN, BCL-X(L) AND A1.
C SUBCELLULAR LOCATION: Membrane-bound.
C ALTERNATIVE PRODUCTS: A 21 kDa MEMBRANE PROTEIN ALPHA AND THE TWO SPLICING.
FISSUE SPECIFICITY: EXPRESSED IN A ....
                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Madison D.L. Pfeiffer S.E.;
"Cloning of the 3' end of rat
developmental down-regulation
oligodendrocytes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Brain;
MEDLINE-97147318; PubMed-8994223;
DOMAIN
TRANSMEM
CONFLICT
CONFLICT
                                                                                  Apoptosis;
DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 75-192 FROM N.A.
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                                                                                                                                                                                                    SMART:
                                                                                                                                                                                                                                                                     EMBL: U49729; AAC26327.1; ...
EMBL: U59184; AAC52998.1; ...
EMBL: U32098; AAA75200.1; ...
EMBL: $76511; AAC60700.2; ...
HSSP: Q07817; IMA2.
                                                                                                                                  PROSITE; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
PROSITE; PS01259; BH3; 1.
PROSITE; PS50062; BCL2_FA
                                                                                                                                                                                                      Pfam; PF00452; Bc1-2; 1
SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                        InterPro; IPR002475; BCL2_family.
InterPro; IPR000712; Bcl_2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE SPECIFICITY: EXPRESSED IN A WIDE VARIETY OF TISSUES, WITH THE TESTIS AND OVARY.

HIGHEST LEVELS IN THE TESTIS AND OVARY.

DOMAIN: INTACT BH3 DOMAIN IS REQUIRED BY BIK, BID, BAK, BAD AND BOAT FOR THEIR PRO-APOPTOTIC ACTIVITY AND FOR THEIR INTERACTION WITH ANTI-APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 FAMILY.

APOPTOTIC MEMBERS OF THE BCL-2 HOMOLOGY DOMAIN 1 (BH1).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2 (BH2).

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3 (BH3).

SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                       Transmembrane;
     59
98
150
172
72
76
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                                                                                                                                     BCL2_FAMILY;
     73
118
165
192
72
72
                                                                                                                       Alternative
 BH3.
BH1.
BH2.
POTENTIAL.
S -> N (IN
L -> M (IN
C -> Y (IN
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in differentiating primary, cultured
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SEQUENCE
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01-NOV-1997
16-OCT-2001
                                                                                                Hypothetical TRANSMEM TRANSMEM
                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a c between the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.lsb-slb.or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       YA64_HAEIN
P71367;
                                                                       TRANSMEM SEQUENCE
                                                                                                                                                                                                                                                influenzae Rd.";
Science 269:496-512(1995).
                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; P. Haemophilus
                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical
HI1064.
                                                                                                                                                                                                                                                          "Whole-genome random sequencing and assembly
influenzae Rd.";
                                                                                                                       InterPro; IPRUU
Pfam; PF02418;
                                                                                                                                        EMBL; U32786;
TIGR; HI1064;
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402
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               ASTKKLSECLKRIGDELDSNME
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26; Conserv
                                Similarity
10; Conserv
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                                                                   1 protein; '53 53 55 75 81 10 125 14 485 AA; 5
                                                                                                                                 IPR003371; DUF146.
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(Rel.
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(Rel. 40, Last annotation
protein HI1064.
                                                                                                                                                 AAC22718.1; -.
                                                                                                                         DUF146;
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159
21350
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55401
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96.3%;
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                                                                                                                Transmembrane;
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1; Mismatches
                                                                        POTENTIAL.
POTENTIAL.
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POTENTIAL.
3C0D8285C64D5F55
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                                        Score 52;
Pred. No.
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-> E (IN REF. 1)
7B3CD198D56DF589
                                                                                                                                                                                                                                  UPF0141 FAMILY.
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                                 Mismatches
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No. 4.
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RESULT 7
GATA_YEAST
ID GATA_YEAST
AC P17649;
DT 01-AUG-1990
DT 01-OCT-196
DT 01-OCT-196
DT 01-OCT-196
DT 4-aminobuty
GAI OR YGR
OS SACCHATOMYC.
OC EURATYOTA;
OC EURATYOTA;
OC SACCHATOMYC.
OC EURATOMYC.
RP SEQUENCE FR
RC STRAIN-1278
RX MEDLINE-974
RA Rieger M.
RT "Sequence A RIEGET M.
REDLINE-974
RA Rieger M.
RT "Sequence A RITOTA CC -!- SUBUNIT
CC -!- SUBUNIT
CC -!- SUBUNIT
CC -!- SUBUNIT
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CC ---------
CC EMBL; Z526(
DR EMBL; Z526(
DR EMBL; Z526(
DR FIR; S26708
DR PROSITE; P6
EMBL; S26708
DR PROSITE; P6
EMBL; S26708
DR PROSITE; P6
EMBLINGING
FT CONTACCE
RESULT 8
SP10_HUMAN
ID SP10_HUMAN
                                                                                                                                                                                                                                             QΥ
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EMD.,
PIR, $2670b,
HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HSSP; P80147; 1GTX.

HESSP; P80147; 1GTX.

HITCHIPTO; IPR009954; Aminotran_3; 1.

PROSITE; P800600; AA_TRANSFER_CLASS_3; 1.

PROSITE: P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P10464; P1
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Best Local :
                                                                                                                                                                                                                                                                                                                        Matches
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Ol-AUG-1990 (Rel. 15, Created)
Ol-AUG-1996 (Rel. 34, Last sequence update)
Ol-OCT-1996 (Rel. 39, Last annotation update)
30-MAY-2000 (Rel. 39, Last annotation update)
4-aminobutyrate aminotransferase (EC 2.6.1.19) (Gamma-amino-N-butyrate
CABA transaminase) (GABA aminotransferase) (GABA-AT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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-!- CATALYTIC ACTIVITY: 4-aminobutanoate + 2-oxoglutarate = succinate - semialdehyde + L-glutamate.
-!- COFACTOR: PYRIDOXAL PHOSPHATE.
-!- SUBUNIT: HOMODIMER (POSSIBLE).
-!- SUBUNIT: BELONGS TO CLASS-III OF PYRIDOXAL-PHOSPHATE-DEPENDENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; X52600; CAA36833.1; -. EMBL; Z72804; CAA97002.1; -. PIR; S26708; S26708.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rieger M., Brueckner M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=97435481; PubMed=9290212;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Sequence analysis of 203 kilobases from Saccharomyces cerevisiae
                                                                                                                                                                                       367
                                                                                                                                                                                                                                                                                                                     Local Similarity 46. hes 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AMINOTRANSFERASES.
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                                                                                                                                                                                QEISDKKLTEQCSRVGDYLFKKLEGLQK 394
                                                                                                                                                                                                                                             QDASTKKLSECLKRIGDELDSNME-LQR 27
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          STANDARD;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Schaefer M., Mueller-Auer S.;
                                                                                                                                                                                                                                                                                                                     5.
          PRT;
                                                                                                                                                                                                                                                                                                                     Mismatches
          879
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                                                                                                                                                                                                                                                                                                                 Gaps
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Ubiquitin-like modifiers.";

J. Biol. Chem. 274:12555-12566(1999).

-i. FUNCTION: MAY PLAY A ROLE IN THE CONTROL OF GENE EXPRESSION.

-i. FUNCTION: MAY PLAY A ROLE IN THE CONTROL OF GENE EXPRESSION.

-i. SUBUNIT: HOMODIMER. SPLICE VARIANTS HETERODIMERIZE. INTERACTS WITH MEMBERS OF THE HP1 FAMILY OF NONHISTONE CHROMOSOMAL PROTEIN, SUCH AS HETEROCHROMATIN PROTEIN 1-ALPHA (HP1-ALPHA) AND HETEROCHROMATIN AS HETEROCHROMATIN PROTEIN 1-GAMMA).

-i. SUBCELLULAR LOCATION: NUCLEAR. FOUND IN THE NUCLEAR BODY, ALSO KNOWN AS NUCLEAR DOMAIN (DOLO), PML ONCOGENIC DOMAIN (POD), NUCLEAR DOTS. (ND) AND KR BODY. THE NUCLEAR BODY IS A NUCLEOPLASMIC STRUCTURE OF PUNCTATE SHAPE, WHICH VARIES IN SIZE AND NUMBER.
                                                                                                                                                                                                                                                                                                                                                       CHARACTERIZATION, AND COVALENT BINDING TO SUMO-1.
MEDLINE-99230277; pubmed-10212234;
Sternsdorf T., Jensen K., Reich B., Will H.;
"The nuclear dot protein sp100, characterization of domains necessary for dimerization, subcellular localization, and modification by small
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Groetzinger T., Jensen K., Will H.;
"The Interferon (IFN)-stimulated gene Sp100 promoter contains an IFN-
gamma activation site and an imperfect IFN-stimulated response elemen
which mediate type I IFN inducibility.";
J. Biol. Chem. 271:25253-25260(1996).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        primary biliary cirrhosis.*;
J. Immunol. 145:4338-4347(1990).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Guldner H.H., Szostecki C., Schroeder P., Matschl U., Jensen K., Lueders C., Will H., Sternsdorf T.;
"Splice variants of the nuclear dot-associated Spl00 protein contain homologies to HMG-1 and a human nuclear phosphoprotein-box motif.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALTERNATIVE SPLICING (ISOFORMS SP100-B; SPALT-C TISSUE-Cervical adenocarcinoma; MEDLINE-99141186; PubMed-9973607;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "LYSP100-associated nuclear domains class of subnuclear structures and t
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Breast cancer;
MEDLINE-98301571; Pub
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE=96411734; PubMed=8810287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Lymphoma;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Blood 88:1423-1426(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         bodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Staudt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Liver, and Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Proc. Natl. Acad. Sci. U.S.A. 95:7316-7321(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mammai
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human)
Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Spl00 protein) (Lysp100b).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1-10 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. (ISOFORM SP100-HMG).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                yota; Metazoa; Chordata;
lia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sci. 112:733-747(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Yewdell J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PubMed=8695863;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed-9636146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (ISOFORM SP100-B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Puvion-Dutilleul F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SP100-A).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Craniata; Vertebrata; Catarrhini; Hominidae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             s (LANDs): description their relationship to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Koken M.H.M.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SP100-HMG).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Euteleostomi;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The
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EMBL; AF056322; AAG39790.1; -.
EMBL; M60618; AAA35537.1; -.
EMBL; U36501; AAC50743.1; -.
EMBL; X95472; CAA64744.1; -.
PIR; A37244; A37244.
HSSP; P07155; 1HME.
                                                                  VARSPLIC
VARSPLIC
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DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PROOBB6; HIGHMOBLTY12
SMART; SM0039B; HMG; 2.
SMART; SM0025B; SAND; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR000770; SAND. Pfam; PF00505; HMG_box; 2. Pfam; PF01342; SAND; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
    VARSPLIC
                                                                                                                                                    BINDING
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Coiled coil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR000910; HMG_12_box.
InterPro; IPR000135; Highmobity_12.
InterPro; IPR000770; SAND.
                                                                                                          VARSPLIC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MW OF 54 KDA, BUT EXHIBITS ABERRANT ELECTR MITH AN APPARENT MW OF 100 KDA.
SIMILARITY: CONTAINS 1 SAND DOMAIN.
SIMILARITY: CONTAINS 2 HMG BOXES.
SIMILARITY: TO NUCLEAR AUTOANTIGEN SP-140.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TARGETTING.

DISEASE: THIS ANTIGEN IS RECOGNIZED BY AUTOANTIBUDLES FROM
PATIENTS WITH PRIMARY BILIARY CIRRHOSIS (PBC).

MISCELLANEOUS: THE MAJOR SPLICE VARIANT, SPLOO-A, HAS A CALCULA
MISCELLANEOUS: THE MAJOR SPLICE VARIANT, SPLOO-A, MOBILITIES,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE SPECIFICITY: WIDELY EXPRESSED. SP100-B IS EXPRESSED ONLY IN SPLEEN, TONSIL, THYMUS, MATURE B-CELL LINE AND SOME T-CELL LINE, BUT NOT IN BRAIN, LIVER, MUSCLE OR NONLYMPHOID CELL LINES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBNUCLEAR LOCALIZATION OF THE ISOFORMS.
ALTERNATIVE PRODUCTS: 4 ISOFORMS; SP100-A/SP100, SP100-B/SPALT-
212, SPALT-C AND SP100-HMG/SPALT-HMG (SHOWN HERE); ARE PRODUCED BY
ALTERNATIVE SPLICING. SP100-A IS THE MORE ABUNDANT ISOFORM.
SP100-HMG CONTAINS AN ALMOST COMPLETE AND HIGHLY CONSERVED COPY OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PTM: PHOSPHORYLATED.

PTM: COVALENTLY CONJUGATED TO ONE SMALL UBIQUITIN-RELATED PROTEIN SUMO-1. SUMOYLATION DEPENDS ON A FUNCTIONAL NUCLEAR LOCALIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN: THE HSR DOMAIN IS IMPORTANT FOR THE NUCLEAR TARGETTING AS WELL AS FOR THE DIMERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INDUCTION: BY INTERFERON. DOMAIN: THE HSR DOMAIN IS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TARGETTING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL BUT IS NOT NECESSARY FOR NUCLEAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      INDUCTION BY INTERFERON AND MAY BE CELL CYCLE STAGES MODULATE THE SUBNUCLEAR LOCALIZATION OF THE ISOFORMS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA-BINDING HMG1 BOX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nuclear protein; DNA-binding; Phosphorylation;
                                                              156
759
854
860
297
478
481
685
                                                                                                                                                                                                                                                                                                                                                                                                                                   Alternative
                                                              164
764
764
859
859
868
879
688
                                                                                                                                                                                                                                                                            553
592
734
753
837
837
                                                                                                                                                                                                                                                                                                                                                                                                                                                     splicing;
SUMO-1 (PROBABLE).

$QP -> KED (IN ISOFORM SP100-A).

MISSING (IN ISOFORM SP100-B).

RILE -> VTIK (IN ISOFORM SP100-B).

MISSING (IN ISOFORM SP100-B).

RESSDFSDLSNGEELQETCSSSL -> LKKKKKKKKCCHPQ
PQPQRGLLEQS (IN ISOFORM SP100-C).

MISSING (IN ISOFORM SP100-C).
                                                                                                                                                                    POLY-GLU.
POLY-LYS.
POLY-GLU.
                                                                                                                                                                                                                                                                                                                                                                                       NUCLEAR
NUCLEAR
                                                                                                                                                                                                                                                          COILED COIL POLY-GLY.
                                                                                                                                                                                                                                                                                                                                                                     NUCLEAR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Repeat
                                                                                                                                                                                                                                                                                                                                                                   R LOCALIZATION R LOCALIZATION R LOCALIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMPORT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                                                                                                                                                                                                                                   N SIGNAL
N SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OR NUCLEAR BODY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BODY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 and
                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
(POTENTIAL).
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RESULT 10
RBSK\_BACHD
ID RBSK\_B
AC Q9K6K1
DT 01-MAR

RBSK\_BACHD STANDARD; Q9K6K1; Q1-MAR-2002 (Rel. 41, Created)

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SOFT
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                                                                                                                                                                                                                                   RX MEDLINE-94222102; PubMed-8168542;

RA Takagi T., Petrova T., Comte M., Kuster T., Heizmann C.W., Cox J.A.;

RA Takagi T., Petrova T., Comte M., Kuster T., Heizmann C.W., Cox J.A.;

RT TCharacterization and primary structure of amphioxus troponin C.";

RI Eur. J. Biochem. 221:537-546(1994).

C. 1. FUNCTION: TROPONIN IS THE CENTRAL REGULATORY PROTEIN OF STRIATED C.

C. MINCLE CONTRACTION. TN CONSISTS OF THREE COMPONENTS: TN-I WHICH CONTAIN THE C.

C. IS THE INHIBITOR OF ACTOMYOSIN ATPASE, TN-T WHICH CONTAIN THE BINDING OF CALCIUM TO C.

C. TN-C ABOLISHES THE INHIBITORY ACTION OF TN ON ACTIN FILAMENTS.

C. 1- MISCELLANEOUS: THIS PROTEIN BINDS THREE CALCIUM IONS.

C. HSSP; P10246; ITRF.

R HSSP; P10246; ITRF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
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Best Local S
Matches 10
                                             Query Match
Best Local S
Matches 12
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01-JUN-1994
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TPC_BRALA
P80322;
                                                                                                     MOD_RES
MOD_RES
CA_BIND
CA_BIND
CA_BIND
DOMAIN
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                       Branchiostoma lanceolatum (Common lancelet) (Amphioxus).
Eukaryota; Metazoa; Chordata; Cephalochordata; Branchiostomidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Troponin
                                                                                                                                                                                    Muscle
                                                                                                                                                                                               PROSITE;
                                                                                                                                                                                                          Pfam; PF00036; efhand; SMART; SM00054; EFh; 4
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-7740;
                                                                                                                                                                                                                                                                                                                                                                                                                              Branchiostoma
                                                                                                                                                                                                                                 InterPro; IPR002048; EF-hand.
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                      N
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DISTKELGTIMKRLGMSI-SREELQQ
                     DASTKKLSECLKRIGDELDSNMELQR 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DASTKKLSECLKRIGDELD----SNMELQR 27
                                             ch 35.2%;
l Similarity 46.2%;
12; Conservative
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                                                                                                                                                                                   protein; Calcium-binding;
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879
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                                                                                                      ΑA;
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114
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35,
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651
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33.3%;
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Last
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Created)
                                                                                                       WW.
                                                                                                   nding: Acetylation; Methylation.
ACETYLATION (IN THE MAJORITY OF CHAINS)
METHYLATION (MONO- AND DI-).
EF-HAND 1 (BY SIMILARITY).
EF-HAND 2 (BY SIMILARITY).
EF-HAND 3 (BY SIMILARITY).
EF-HAND 3 (BY SIMILARITY).
ANCESTRAL CALCIUM SITE 4 (POTENTIAL).
ANCESTRAL CALCIUM SITE 4 (POTENTIAL).
MW; AE6F435F9FB1DB40 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sequence update)
annotation update)
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                                              5.
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Pred.
                                                         Score
Pred.
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A -> R (IN REF. 4).
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/FTId=VAR_005622.
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S -> P (IN HELA (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -> V (IN HELA CELLS).
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 57
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                                              Mismatches
                                                         47.5;
No. 11
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20;
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                                                                    Length 163;
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                                                Indels
                                                                                                                                                                          OF CHAINS).
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MESULT 11

MDH_ME

ID MDH_ME

AC P16142

AC P16142

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AC P16142

AC P16142

AC P16142

AC P16142

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AC P16142

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AC Archae

AC Methan

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AC Methan

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Best Local
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                                                                                                                                                                                                                                                                                                                         P16142;
01-APR-1990 (Rel. 1
01-APR-1990 (Rel. 1
01-MAR-2002 (Rel. 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
SEQUENCE PROM N.A., AND SEQUENCE OF 1-24. STRAIN-V24S / DSM 2088; MEDLINE-90235884; PubMed-2110059; MEDLINE-90235845; PubMed-2110059; Properties and primary structure of the L-the extremely thermophilic archaebacterium Eur. J. Blochem. 188:623-632(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Fuji F., Hirama C., Nakamura Y., Ogasawara N.,
Horikoshi K.;
"Complete genome sequence of the alkaliphilic
halodurans and genomic sequence comparison wit
                                                                                                                                                                                                          Methanothermus fervidus
Archaea; Euryarchaeota;
Methanothermus
                                                                                                                                                                                                                                                                                                01-APR-1990 (Rel. 14, Created)
01-APR-1990 (Rel. 14, Last sequence update)
01-ARR-2002 (Rel. 41, Last annotation update)
Malate/L-sulfolactate dehydrogenase (EC 1.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PROSITE; PS00584; PFKB_KINASES_1; 1.
PROSITE; PS00584; PFKB_KINASES_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR002173; PfkB.
InterPro; IPR002139; Ribokin
Pfam; PF00294; pfkB; 1.
PRINTS; PR00990; RIBOKINASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AP001519; BAB07447.1; -. HSSP; P05054; 1RKD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Takami
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=C-125 / JCM 9153;
MEDLINE=20512582; PubMed=11058132;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A
STRAIN=C-125 / JC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus/Staphylococcus
NCBI_TaxID=86665;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bacillus halodurans.
Bacteria; Firmicutes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RBSK OR BH3728
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ribokinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAR-2002
01-MAR-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transferase;
                                                                                                                                                                                     NCBI_TaxID-2180;
                                                                                                                                                                                                                                                                                                                                                                                                                      MDH_METFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        187
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SIMILARITY: BELONGS TO THE PFKB FAMILY OF CARBOHYDRATE KINASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NECLQLFGDEPDANL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SECLKRIGDELDSNM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ni H., Nakasone K., Takax
F., Hirama C., Nakamura
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity 53.8
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nakasone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (Rel. 41, Last : Rel. 41, Last : EC 2.7.1.15).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Kinase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ā
                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Complete proteome. 31089 MW; 8C13E0FCF5E89FDE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ribokinase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Takaki Y.,
                                                                                                                                                                                                                                   Methanobacteriales; Methanothermaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence up
annotation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 47; DB Pred. No. 23; 4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                T., Palm P., Hensel R. ture of the L-malate d
                                                                                                                                                                                                                                                                                                                                                                                                                         PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ., Maeno G., Sasaki R.,
Ogasawara N., Kuhara S
                                                                                                                                                                                                                                                                                                     on update) (EC 1.1.1.
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                                             the L-malate dehydrogenase
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23;
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                           Methanothermus
                                                                                                                                                                                                                                                                                                     .37)
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                           fervidus.
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Best Local
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FUNCTION
                                                                                                                                                                                                                                                                                                               Q07820; Q9NRQ3; Q9NRQ4;
01-FEB-1995 (Rel. 31, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Induced myeloid leukemia cell differentiation
                                                                                                                                                                                                                                                                                                                                                                                                         HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Graupner M., Xu H., White R.H.;

'Identification of an archaeal 2-hydroxy acid dehydrogenase catalyzing reactions involved in coenzyme biosynthesis in methanoarchaea.";

J. Bacteriol. 182:3688-3692(2000).

1. FUNCTION: Acts on oxaloacetate, sulfopyruvate but not on pyruvate. Has a higher selectivity for the coenzyme MADH than for NADPH.

-! CATALYTIC ACTIVITY: (S)-malate + NAD(P)(+) - oxaloacetate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPR003767; ldh_2.
Pfam; PF02615; ldh_2; 1.
Oxidoreductase; Tricarboxylic
SEQUENCE 339 AA; 36762 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; X51714; CAA36010.1;
EMBL; X51840; CAA36133.1;
PIR; S08689; S08689.
PIR; S08981; S08981.
 "Exon skipping in Mcl-1 results in product that promotes cell death.";
J. Biol. Chem. 275:22136-22146(2000
                                                                                                                    SEQUENCE FROM N.A. (ISOFORM 1).

TISSUB-Myeloid leukemia cells;

MEDLLINE-93234528; PubMed-7682708;

KOZOPAS K.M., Yang T., Buchan H.L., Zhou P., Crai

"MCLI, a gene expressed in programmed myeloid cel
has sequence similarity to BCL2.";

Proc. Natl. Acad. Sci. U.S.A. 90:3516-3520(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ÷
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                                          SEQUENCE FROM N.A. (ISOFORMS 1 AND MEDILINE-20357335; Pubmed-10766760; Bingle C.D., Craig R.W., Swales B.W. Whyte M.K.B.;
                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ÷
                                                                                                                                                                                                                                                                                      Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                            MCL1_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6 KKLSECLKRIGDELDSNMEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBCELLULAR LOCATION: (
SIMILARITY: BELONGS TO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAD(P)H. CATALYTIC ACTIVITY: (R)-sulfolactate + NAD(P)(+) = sulfopyruvate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAD(P)H.
SUBUNIT: Homodimer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KKLVEKLKEIADEL -- NIEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 l Similarity
13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
   promotes cell death.";
m, 275:22136-22146(2000)
                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            34.8%;
65.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      337
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THE LDH2/MDH2 OXDIDOREDUCTASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 47; DB Pred. No. 27; 1; Mismatches
                                                                                                                                                                                                                                                       Craniata; Vertebrata; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         acid cycle; NAD; NADP
2319D822DB275835 CRC
                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                            В.м.,
                             ω
                                                                                        2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             47;
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                                Bc1-2
                                                            Singleton
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27;
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                               homology
                                                                                                                                                   Craig
d cell
                                                                                                                                                                                                                                                                                                                  protein Mcl-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 339;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CRC64;
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differentiation,
                                                            Zhou
                                                                                                                                                                                                                                                                         Euteleostomi;
                               domain 3 only gene
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Best Local :
                                                                                                          p53090.
01-OCT 1996 (Rel. 34, Created)
01-OCT 1996 (Rel. 37, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
Aromatic amino acid aminotransferase I (EC 2.6.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                 VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entitles requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
STRAIN-SIGMA 1278B;
                                       Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
NCBI_TaxID=4932;
                                                                                                       ARO8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TRANSMEM
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PROSITE: P550062; BCL2_FAMILY; PROSITE: P501080; BH1; 1. PROSITE: P501258; BH2; 1. PROSITE: P501259; BH3; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; L08246; -; NOT_ANNOTATED_CDS.
EMBL; AF198614; AAF64255.1; -.
EMBL; AF198614; AAF64256.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro: IPR002475; BCL2_family InterPro; IPR000712; Bcl_2. Pfam; PF00452; Bcl-2; 1. SMART; SM00337; BCL; 1.
                                                                                                                                                                                             ARO8_YEAST
                                                                                                                                                                                                             YEAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIR; A47476; A47476.
MIM; 159552; -.
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                                                                                                                                                                                                                                                                     204
                                                                                                                                                                                                                                                                                                3 ASTKKLSECLKRIGDELDSNME 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LEUKEMIA CELL LINES ML-1.

SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 1
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 2
SIMILARITY: CONTAINS 1 BCL-2 HOMOLOGY DOMAIN 3
SIMILARITY: BELONGS TO THE BCL-2 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      are produced by alternative splicing.
INDUCTION: EXPRESSION INCREASES EARLY DURING PHORBOL-ESTER INDUCED DIFFERENTIATION ALONG THE MONOCYTE/MACROPHAGE PATHWAY IN MYELOID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: Involved in programing of differentiation and concomitant maintenance of viability but not of proliferation. Isoform 1 inhibits apoptosis while isoform 2 promotes it. SUBCELLULAR LOCATION: Membrane-bound (Potential). ALTERNATIVE PRODUCTS: 2 isoforms; 1 (shown here) and 2/delta
                                                                                                      OR YGL202W
                                                                                                                                                                                                                                                                   ATSRKALETLRRVGDGVQRNHE
                                                                                                                                                                                                                                                                                                                           Similarity
9; Conser
                                                                                                                                                                                                                                                                                                                                                                                                272
173
350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Transmembrane; Differentiation;
                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                             STANDARD;
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173
37323
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POTENTIAL.

POTENTIAL.

POTENTIAL.

POTENTIAL.

NUCGVLPCHGPRRNHOECAAGFCRCCWSRSWFGISNKI

ALL (IN ISOFORM 2).

ALSSING (IN ISOFORM 2).

MISSING (IN ISOFORM 2).

D -> E (IN REF. 1).

D -> E (IN REF. 1).
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                                                                                                                                                                                                                                                                                                                           Score 47; DB
Pred. No. 28;
6; Mismatches
                                                                                                                                                                                             PRT;
                                                                                                                                                                                             500
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                                                                                                                                                                                                                                                                                                                                                        <u>س</u>ر
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alternative splicing.
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(BH2).
(BH3).
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RESCRIPTION
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P05095;
                                                                                                                                                                                                                                                                    J. Cell Biol. 103:969-975(1986).
-I- FUNCTION: F-ACTIN CROSS-LINKING
ACTIN TO A VARIETY OF INTRACELLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DICDI
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Iraqui I., Vissers S., Cartiaux M., Urrestarazu A.;
"Characterisation of Sacoharomyces cerevisiae ARO8 and
encoding aromatic aminotransferases I and II reveals a
                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-86304574; PubMed-3745276; Witke W., Schleicher M., Lottspetch F., Noegel & "Studies on the transcription, translation, and actinin in Dictyostellum discoideum.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Noegel A., Witke W., Schleicher "Calcium-sensitive non muscle al structures and highly conserved FEBS Lett. 221:391-396(1987).
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Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases
-!- SIMILARITY: TO YEAST ARO9.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 aminotransferase subfamily.";
Mol. Gen. Genet. 257:238-248(1998).
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Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
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                                 PROTEIN.
SUBUNIT: HOMODIMER, ANTIPARALLEL.
SIMILARITY: CONTAINS 1 ACTIN-BINDING DOMAIN.
SIMILARITY: CONTAINS 2 CALPONIN-HOMOLOGY (CH) [
SIMILARITY: CONTAINS 2 EF-HAND CALCIUM-BINDING
SIMILARITY: CONTAINS 4 SPECTRIN REPEATS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SPEKLTEGLKRLGDTL 492
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10; Conservative
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3 (Rel. 09,
1 (Rel. 40,
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00 AA; 56177 MW;
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non-muscular (f·actin cross linking protein).
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                                                                                                                                                                                                                                                                            SS-LINKING PROTEIN WHICH IS THOUGHT TO ANCHOR INTRACELLULAR STRUCTURES. THIS IS A BUNDLING
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Pred. No. 40;
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ed regions.";
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Pfam: PF0035; ethand; 2.
Pfam: PF00435; spectrin; 4.
SMART; SM00033; CH: 2.
SMART; SM00054; EFh; 2.
SMART; SM00150; SPEC; 3.
SMART; SM00150; SPEC; 3.
SMART; SM00150; ACTININ_1: 1
PROSITE: PS00019; ACTININ_2: 1
PROSITE: PS00011; CH: 2.
PROSITE: PS00011; CH: 2.
PROSITE: PS00018; EF_HAND; 2.
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15-JUL-1998 (Rel. 36, Created)
15-JUL-1998 (Rel. 36, Last sequence update)
15-JUL-1998 (Rel. 36, Last annotation update)
Hypothetical 116.5 kDa protein C2008.09C in cl
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InterPro;
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         Badcock K. Churcher C.M., Wood V., Barrell B.G., Rajandream M.A.; • Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
-i- SIMILARITY: TO YEAST YNL132W AND AN A.AMBISEXUALIS HYPOTHETICAL PROTEIN (AC P54008).
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; Y00689; CAA68685.1; -. EMBL; X04324; CAA27855.1; -. PIR; S00103; FADOAA.
                                                                                                            Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                     Schizosaccharomyces pombe (Fission yeast).
Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes;
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7; IPR002048; EP-hand.

7; IPR002017; Spectrin.
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EF-HAND 1 (BY SIMILARITY).
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T -> P (IN REF. 2).
I -> T (IN REF. 2).
M4; 15608ADB71213226 CRC64;
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CH 2.
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                                                                                   Query Match
Best Local
                                                                                                                                                                                                                                   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                     EMBL; Z95334; CAB08603.1; -
Hyporthetical protein; ATP-binding.
NP_BIND 282 289 ATP (
SEQUENCE 1033 AA; 116463 MW; 8
661 KAVKHSLKRIGDEEIENTALQ
                                                                Local Similarity 52.
                                 σ
                               KKLSECLKRIGDELDSNMELQ 26
                                                                               34.18;
681
                                                             Score 46; DB 1; Lo
Pred. No. 1.1e+02;
1; Mismatches 9;
                                                                                                                                                     0 (POTENTIAL).
8432B313D818E135 CRC64;
                                                                                                Length 1033;
                                                                  Indels
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Search completed: September 20, Job time: 1627 sec 2002, 11:04:30

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Title:
Perfect score:
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Maximum Match 100%
Listing first 45 summaries
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1: sp_archea:*
2: sp_bacteria
3: sp_fungi:*
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113:
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116:
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Gapop 10.0 , Gapext 0.5
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135
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
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sp_bacteriap:*
sp_archeap:*
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sp_mammal:*
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sp_bacteria:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

16	15	14	13	12	11	10	9	8	7	6	v	4	ω	2	_	Result No.
51	51	51	51	51	52	53	53	54	66	83	107	129	135	135	135	Score
37.8	37.8	37.8	37.8	37.8	38.5	39.3	39.3	40.0	48.9	61.5	79.3	95.6	100.0	100.0	100.0	Query Match
1252	885	845	480	427	575	1861	913	1124	15	192	221	173	179	164	149	Length DB
v	4	16	4	N	10	ហ	ഗ	12	4	13	13	11	4	4	6	DB
Q9VTY9	Q96T95	083501	Q96F70	030773	Q9SLJ7	Q9VF02	Q94893	Q9DVW1	Q9UCZ7	Q919N4	098013	Q9JKL3	Q9NYG7	900006	Q9GMG7	İb
Q9vty9 drosophila	Q96t95 homo sapien	083501 treponema p	Q96f70 homo sapien	030773 treponema p	Q9slj7 arabidopsis	Q9vf02 drosophila	Q94893 drosophila	Q9dvw1 plutella xy	Q9ucz7 homo sapien	Q9i9n4 brachydanio	Q98ul3 xenopus lae	Q9jkl3 rattus norv	Q9nyg7 homo sapien		Q9gmg7 ovis aries	Description

45	44	43	42	41	40	39	38	37	36	ა 5	34	33 33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
47	47	47	47	47	47.5	47.5	48	48	48	48	48	48.5	49	49	49	49	49	49	49	49	49	49	49.5	49.5	50	50	50	50
34.8	34.8	34.8	34.8	34,8	35.2	35.2	35.6	35.6	35.6	35.6	35.6	35.9	36.3	36.3	36.3	36,3	36.3	36.3	36.3	36.3	36.3	36.3	36.7	36.7	37.0	37.0	37.0	37.0
217	108	94	92	72	164	164	1957	1957	1814	1098	126	213	740	732	718	669	665	527	342	311	286	196	724	675	1219	1184	948	614
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058748	Q9UHR8	Q9UHR7	Q9UHR9	Q9YRQ6	P90687	P92198	Q04010	004009	Q9BLM9	Q9VB48	Q95Z30	Q91MS6	Q9PC07	Q27480	Q9LF10	Q97U18	Q9H9N3	Q9JGP5	Q9LMB3	Q9LMB2	Q27341	Q94BU3	Q961W7	Q9VS46	Q9LL84	Q9LU70	Q9VDQ7	Q06270
058748 pyrococcus	Q9uhr8 homo sapien	Q9uhr7 homo sapien	Q9uhr9 homo sapien		P90687 branchiosto			Q04009 brugia mala		Q9vb48 drosophila		Q91ms6 lumpy skin	09pc07 xylella fas	Q27480 caenorhabdi	Q91f10 arabidopsis	Q97u18 sulfolobus	Q9h9n3 homo sapien	Q9jgp5 epizootic h	Q91mb3 arabidopsis		Q27341 trichomegal		Q961w7 drosophila		Q91184 arabidopsis	Q91u70 arabidopsis	Q9vdq7 drosophila	Q06270 ommastrephe

## ALIGNMENTS

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A MUTTAY J.F., Dong Y.B., Leigh A.J., Scaramuzzi R.J., Carter Mutray J.F., Dong Y.B., Leigh A.J., Scaramuzzi R.J., Carter T "Bax in the sheep ovary.";

I Submitted (JUN-1999) to the EMBL/GenBank/DDBJ databases.

R EMBL; AF163774; AAF98242-1; -.

R EMBL; AF163774; AAF98242-1; -.

R HSSP; Q07817; 1MAZ.

R InterPro; IPR002475; BCL2_family.

R InterPro; IPR000712; BCL2_family.

R InterPro; IPR000712; BCL2_1.

R FAMPR; SM00337; BCL: 1.

R SMAPR; SM00337; BCL: 1.

R PROSITE; PS50062; BCL2_FAMILY; 1.

R PROSITE; PS50062; BCL2_FAMILY; 1.

R PROSITE; PS1080; BH1; 1.

T NON_TER 149 149

SEQUENCE 149 AA; 16917 MW; ABC10CBE5C64EA2D CRC64;
                                           Query Match
Best Local Similarity
Matches 27; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                  Ovis aries (Sheep).

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;

Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9GMG7;
01-MAR-2001 (TrEMBLrel. 16,
01-MAR-2001 (TrEMBLrel. 16,
01-DEC-2001 (TrEMBLrel. 19,
BCL2-ASSOCIATED PROTEIN BAX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9GMG7
                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
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1 QDASTKKLSECLKRIGDELDSNMELQR 27
                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                           100.0%; Score 135; DB 6; 100.0%; Pred. No. 2.1e-11;
                                                                                                                                                                                                                                                                                                                       Leigh A.J., Scaramuzzi R.J., Carter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
(FRAGMENT).
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 Mismatches

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                                                                           Length 149;
                                                 Indels
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В

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QDASTKKLSECLKRIGDELDSNMELQR

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Best Local S
Matches 27
                   InterPro; IPR002475; BCL2_family.
InterPro; IPR00712; BCl_2.
Pfam; PF00452; BCL-2; 1.
SMART; SM00337; BCL; 1.
PROSITE; PS50062; BCL2_FAMILY; 1.
PROSITE; PS01080; BH1; 1.
PROSITE; PS01259; BH3; 1.
  PROSITE;
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                        DAX-SIGMA.

BAX-SIGMA.

Homo sapiens (Human).

"harvota; Metazoa; Chordata;

"harvota; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9NYG7;
01-OCT-2000 (TrEMBLrel.
01-OCT-2000 (TrEMBLrel.
01-DEC-2001 (TrEMBLrel.
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01-JUN-2001
BAX EPSILON.
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Mammalia; Eutherla;
NCBI_TaxID=9606;
                                                                                                                                                                                    EMBL; AF247393; AAF
HSSP; Q07817; 1MAZ.
                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE=20237095; PubMed=10772918; Schmitt E., Paquet C., Beauchemin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS5006; BCL2_FAMILY; 1.

PROSITE; PS01080; BH1; 1.

PROSITE; PS01259; BH3; 1.

PROSITE; PS01259; BH3; 1.

SEQUENCE 164 AA; 18129 MW; 12CCDB8073EF4C9E CRC64;
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                       Biochem.
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01-MAY-2000
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                                                                                                                                                                                                                                                                                    Characterization of bax-sigma, a cell
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                                                                                                                                                                                                                                     Biophys. Res. Commun.
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(TrEMBLrel. 15, Last sequence up)
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  19718
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  MW.
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  5802B0AC73B2E4CE CRC64;
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novel bax
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Best Local S
Matches 27
                                                                                                                                                                                                                                                                                                                                                                                                  Q98U13;
Q98U13;
01-JUN-2001
01-JUN-2001
01-DEC-2001
MEDLINE=21107661; PubMed=11158585;
Finkleistein C.V., Lewellyn A.L., Maller J.L.;
The midblastula transition in Xenopus embryos activates multiple pathways to prevent apoptosis in response to DNA damage.";
Proc. Natl. Acad. Sci. U.S.A. 98:1006-1011(2001).
EMBL; AF288809; AAK06406.1; -.
HSSP; P53563; 1AF3.
InterPro; IPR0002475; BCL2_family.
InterPro; IPR0002475; BCL2_family.
Pfam; PF00452; Bcl-2; 1.
                                                                                                                                                                                                                                                                                                                                                                                    BAX.
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01-OCT-2000 (TrEMBLrel. 15, Creat
01-OCT-2000 (TrEMBLrel. 15, Last
01-DEC-2001 (TrEMBLrel. 19, Last
BAX PROTEIN SPLICE YARIANT K.
                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Ve
Amphibia; Batrachia; Anura; Mesobatrachia;
Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                           Xenopus laevis (African clawed frog).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PROSITE; PS01258; BCL2_FAMILY; PS01178; PS01080; BH1; 1.
PROSITE; PS01258; BH2; 1.
SECUTEMORE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR002475; BCL2_family.
InterPro; IPR000712; BCL2.
Pfam; PF00452; Bcl-2; 1.
SMART; SM00337; BCL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jin K., He X., Greenberg D.A.,
Submitted (FEB-2000) to the EM
EMBL: AF235993; AAF36411.1; -.
HSSP: Q07817; 1MAZ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
MCBI_TaxID=10116;
                                                                                                                                                                                                                                                                 NCBI_TaxID=8355;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    27; Conser
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nilarity 100.0%;
Conservative 0
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19,
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Last annotation
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; Pred. No. 2.6e-11
0; Mismatches 0
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Pred. No. 1
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                                                                                                                                                                                                                                                                                                             vertebrata;
ia; Pipoidea;
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1.7e-10;
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; Pipidae;
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Matches 20
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Q919N4;
01-OCT-2000
01-OCT-2000
01-DEC-2001
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PROSITE;
SEQUENCE
                                                                                                                                                                                                                        O9UCZ7;
O1-MAY-2000 (TrEMBLrel. 13,
O1-MAY-2000 (TrEMBLrel. 14,
O1-JUN-2000 (TrEMBLrel. 14,
BCL2-INTERACTIVE CELL DEATH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          zebrafish.";
Cell Death Differ. 7:509-510(2000)
EMBL; AF231015; AAF66960.1; -.
HSSP; P53563; IAF3.
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; l
Actinopterygii; Meopterygii; Teleostei; Euteleostei;
Cypriniformes; Cyprinidae; Danio.
                                                                                                                                                                                                                                                                                                                                   Q9UCZ7
                                                    SEQUENCE FROM N.A. MEDLINE=96071131; Meijerink J.P., Sm
                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR002475; I
InterPro; IPR000712; I
Pfam; PF00452; Bcl-2;
SMART; SM00337; BCL;
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MEDLINE=20373792; PubMed=10917738;
Inohara N., Nunez G.;
"Bax mutations in cell lines derived from
malignancies.";
                                                                                                                                           NCBI_TaxID=9606;
                                       Mensink E.J.;
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| | |:|||||::|||||||
DPSIKRLSECLRKIGDELDANMELQR 108
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E; PS50062; BCL2_FAMILY;
CE 221 AA; 24251 MW;
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15; Conserv
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l Similarity 76.9%;
20; Conservative
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(TrEMBLrel. 15,
(TrEMBLrel. 19,
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; BCL2_FAMILY;
A; 21401 MW;
                                                          PubMed=7475270;
metsers T.F., Sloetjes
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Bcl_2.
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Pred. No. 0.00
6; Mismatches
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SUSCEPTIBILITY REGULATOR
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Pred. No. 2.7e-07;
4; Mismatches 2
                                                                                                                                                               Craniata; Vertebrata;
Catarrhini; Hominidae
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36DBA2E2240793FA CRC64;
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8A71A630A56FDC32 CRC64;
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0.00055;
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                   hematological
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01-MAR-2001 (TrEMBLrel.
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Pterygota; Neoptera; Endopterygota; Diptera;
Ephydroidea; Drosophilidae; Drosophila.
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EMBL, AF270937; AAG27370.1; -. SEQUENCE 1124 AA; 132875 MW; 83EA3311E4596
                      Goldman-Levi R., Miller C
Submitted (APR-1999) to t
EMBL; U45025; AAB95091.2;
                                                                                                                                                                                                                     melanogaster SNF2-related
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MEDLINE-96371055; PubMed-8774890;
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FlyBase;
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Nucleic Acids Res. 24:3121-3128(1996).
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Eukaryota; Metazoa; Arthropoda; Tracheata;
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RA Adams M.D., Celniker S.E., Richards S.A., Ashburner M., Henderson S.N.,
RA George R.A., Levis S.E., Richards S.A., Ashburner M., Henderson S.N.,
RA George R.A., Levis S.E., Richards S.A., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Ballow R.C., Rogers Y.-H.C., Blazej R.G., Channe M., Pfeiffer B.D.,
RA Abril J.F., Agbayani A., An H.-J., Andrew-Pfannkoch C., Baldwin D.,
RA Ballow R.M., Boyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
RA Abril J.F., Agbayani A., An H.-J., Andrew-Pfannkoch C., Baddwin D.,
RA Ballow R.M., Basun D.A., Butler H., Cadieu E., Center A., Chandra I.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
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RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Golden K., Toopi L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Golden K., Capariellan A.E., Garg N.S., Geibart W.M., Glasser K.,
RA Golden K., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Guan P., Harris M.,
RA Harris N., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Kimmel B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z.,
RA Lasko P., Lei Y., Levitsky A.A., Li J., Li Z., Liang Y., Lin X.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Mental B., Mallohina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Rinert K., Remington K., Saunders R.D.C., Scheeler F., Shen H.,
RA Rinert E., Spradling A.C., Stapleton M., Strong R., Sun E.,
RA Waln Z.-Y., Wassarman D.A., Weinscock G.M., Weissenbach J.,
RA Williams S.M., Woodseg T., Worley K.C., Wu D., Yang S., Yao Q.A.,
Land C., Theng Y., Levitsky A., Li J., J., Yang S., Yao Q.A.,
RA
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Q9VF02;
01-MAY-2000 (TrEMBLrel. 13, 0
01-MAY-2000 (TrEMBLrel. 13, 1
01-DEC-2001 (TrEMBLrel. 19, 1
HELB9B PROTEIN.
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InterPro;
InterPro;
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Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pterygota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.
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Pfam; PF00176; SNF2_N; 1.

SMART; SM00487; DEXDC; 1.

SMART; SM00490; HELICC; 1.
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NCBI_TaxID=7227;
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NON_TER 1
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IPRO01650; Helicase_C.
IPRO00330; SNF2_N.
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AC 01
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Matches 9
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Best Local
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030773;
01-JAN-1998
01-JAN-1998
01-DEC-2001
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Q9SLJ7;
01-MAY-2000
01-MAY-2000
01-JUN-2001
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   MCP-2
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Frederspiel N.A., Palm C.J., Conway A.B., Conn L., Hansen N.F.
Frederspiel N.A., Palm C.J., Rowley D., Buehler E., Dunn I
Altafi H., Araujo R., Huizar L., Rowley D., Buehler E., Dunn I
Gonzalez A., Kremenetskaia I., Kim C., Lenz C., Li J., Liu S.
Luros S., Schwartz J., Shinn P., Toriumi M., Vysotskaia V.S.,
Walker M., Yu G., Ecker J., Theologis A., Davis R.W.;
Walker M., Yu G., Ecker J., Theologis A., Davis R.W.;
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AC005287; AAD25617.1;
EMBL; AC005287; AAD25617.1;
Enterpro; IPR00676; NaH_Exchngr.
                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thaliana (Mouse-ear cress).

Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;

Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae;

eurosids II; Brassicales; Brassicaceae; Arabidopsis.
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Pfam; PF00176; SNF2_N; 1.
SMART; SM00487; DEX_C; 1.
SMART; SM00490; HELICC; 1.
ATP-binding; Helicase.
SEQUENCE 1861 AA; 206155 MW;
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SEQUENCE 575
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Interpro; IPR001650; Helicase_C.
Interpro; IPR000330; SNF2_N.
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                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
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Gibbs R.A.,
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mes 10; Conserv
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Myers E.W.,
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AA; 64043 MW;
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Pred.
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                                                                                                                                                                               Mismatches
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39;
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Liu S.,
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RESULT
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1D OE
AC OE
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DT 0:
DT 0:
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Best Local Similarity 52.4
Matches 11; Conservative
          METHYL-ACCEPTING (TP0488.
Treponema pallidum Bacteria; Spirochi
                                                                                                                                                                                           083501;
083501;
01-NOV-1998
01-NOV-1998
01-DEC-2001
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Q96F70;
Q95F70;
Q1-DEC-2001 (TrEMBLrel. 19, Created)
Q1-DEC-2001 (TrEMBLrel. 19, Last sequence update)
Q1-DEC-2001 (TrEMBLrel. 19, Last annotation update)
S1MILAR TO NUCLEAR ANTIGEN SP100.
HOMO sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrat;
Eukaryota; Metazoa; Chordata; Catarrhini; Hominid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
TISSUE-KIDNEY, AND RENAL CELL ADENOCARCINOMA;
Strausberg R;
Strausberg R;
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ
EMBL; BC011562; AAH11562.1;
SEQUENCE 480 AA; 53768 MW; 10351A33BF3A4C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro: IPR001220; Lectin_legB pfam; PF00672; HAMP; 1. Pfam; PF00015; McP9ignal; 1. SMARR; SM00304; HAMP; 1. SMART; SM00283; MA; 1.
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Infect. Immun. 66:2999-3002(1998).
EMBL; AF016689; AAC18612.1;
InterPro; IPR004089; Chemotaxis_transducer.
InterPro; IPR003660; HAMP.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Treponema pallidum.
Bacteria; Spirochaetales; Spirochaetaceae; Treponema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=9606;
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SEQUENCE 427 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Molecular characterization of treponema pallidum mcp2, a putative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-NICHOLS STRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A
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[1]
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          pallidum.
Spirochaetales;
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               Spirochaetaceae;
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                                                                                                                              Created)
Last sequence update)
Last annotation update)
PROTEIN (MCP2-1).
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Pred. No. 45;
10; Mismatches
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Pred.
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                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10351A33BF3A4C12 CRC64;
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45;
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          Treponema
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Pfam; PF02743; Cache; 1.
Pfam; PF00672; HAMP; 1.
Pfam; PF00015; MCPsignal; 1.
SMART; SM00304; HAMP; 1.
SMART; SM00283; MA; 1.
PROSITE; PS00307; LECTIN_LEGUME_BETA; UNKNOWN_1.
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SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-98332770; PubMed-9665876;
Fraser C.M., Norris S.J., Weinstock G.M., White O., Sutton G.G.,
Dodson R., Gwinn M., Hickey E.K., Clayton R., Ketchum K.A.,
Dodson R., Gwinn M., Hickey E.K., Clayton R., Ketchum K.A.,
Sodergren E., Hardham J.M., McLeod M.P., Salzberg S., Peterson J.,
Khalak H., Richardson D., Howell J.K., Chidambaram M., Utterback T.,
Khalak H., Richardson D., Howell J.K., Chidambaram M., Utterback T.,
McDonald L., Artilach P., Bowman C., Cotton M.D., Fujii C., Garland S
McDonald L., Artilach P., Bowman C., Cotton M.D., Fujii C., Garland S
Hatch B., Horst K., Roberts K., Sandusky M., Weidman J., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Complete genome sequence of Treponema spirochete.";
Science 281:375-388(1998).
EMBL; AE001225; AAC65475.1; ...
MEROPS; S38.UPW; -.
                                                                                                                 Seeler J.S., Marchio A., Losson R., Desterro Chambon P., Dejean A.; Chambon P., Dejean A.; Rectar protein SP100 factor: role of SUMO modification."; Mol. Cell. Biol. 21:3314-3324(2001).
EMBL; AF255565; AR51202.1: -
SEQUENCE 885 AA; 101544 MW; 3D33A46EA871
                                                                                                                                                                                       SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
MEDLINE=21214370; PubMed=11313457;
Seeler J.S., Marchio A., Losson R.,
                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; (
Mammalia; Eutheria; E
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[1]
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DISTRRINECISPVANEMNHLPAHSHDLQR
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11; Conserv
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845 AA; 91517 MW;
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IPR004089: Chemotaxis_transducer.
IPR003660; HAMP.
IPR001220: Lectin_legB.
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(TremBLrel. 19, Last seq
(TremBLrel. 19, Last ann
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Primates;
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52.4%;
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                                                  Score 51; DB
Pred. No. 85;
10; Mismatches
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Last annotation update)
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Pred.
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                                                                                                                    3D33A46EA871CEC7
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36
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Search completed: September 20, 2002, 11:03:39 Job time: 1656 sec